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THE  
AMERICAN  
JOURNAL OF OBSTETRICS

AND  
DISEASES OF WOMEN AND CHILDREN.

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ORIGINAL COMMUNICATIONS.

ON HERNIA OF THE OVARY AND OBSERVATIONS ON THE  
PHYSIOLOGICAL RELATIONS OF THE OVARY,  
WITH THE RELATION OF CASES OBSERVED BY THE AUTHOR.<sup>1</sup>

BY

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SCATTERED in various surgical and obstetric works will be found cases of hernia of the ovary. Most of these cases are briefly described, and the interest is mainly directed to their surgical bearings. No systematic attempt appears to have been made to turn to account the opportunity which the ovary, when brought to the surface, afforded for physiological observation.

From the time of Harvey the Immortal, the phenomena of ovulation, menstruation, and impregnation have engaged the earnest study of a long succession of illustrious physiologists.

<sup>1</sup> This memoir was read before the Roy. Medical and Chirurgical Society of London, January, 1882; it was accepted for publication in their Transactions, requesting that the abstracts of the cited cases should be curtailed. The author, considering that the value of the memoir as a source of reference would thus be sensibly impaired, and that the physiological and pathological arguments based upon these cases would be rendered less intelligible, withdrew it, and has forwarded it to the AM. JOURN. OF OBST. for publication.

The lower animals have supplied the great part of the material for their researches. And in this way, analogy has been made to illustrate and, in some degree, to complement the little direct knowledge of the functions of the ovary in woman derived from investigations after death, and the difficult observation of the ovary during life. Thus it has happened that, although very precise knowledge has been acquired of the functions of the ovary and of the anatomical changes which attend these functions, we have little or no precise knowledge of some most interesting phenomena which arise during the functional work of this organ. The ovary has been studied as an organ apart, or at most in relation to the uterus. The general or constitutional relations of the ovary, its influences, initiative, reactive, and reciprocal upon the blood, the circulation, and the nervous centres have been greatly neglected. The recent researches of Charcot into the relations of the ovary and hystero-epilepsy are the chief qualification of this statement. Nor is this to be wondered at when we consider that the ovary is practically out of the range of observation. It is true that the ovary can, in many instances, be reached by the finger passed up the rectum. But this method of observation, invaluable for clinical purposes, is hardly available for physiological study. It is only when the ovary is brought to the surface of the body, as when it is herniated in the groin, that we can make it the subject of easy and precise observation. Such an opportunity has occurred to me, and I have endeavored to turn it to account.

Before relating the cases and my observations, it may be useful to give a condensed review of some of the recorded cases, and some of the lessons drawn from them.

I do not pretend to give a complete reproduction of or reference to these cases. Many, on account of the vagueness of their histories and the uncertainty of their nature, are intentionally omitted; many cases that might prove instructive have probably escaped my reading. My chief care has been to cite those cases which present definite facts and which may, therefore, safely be trusted as a basis for physiological and pathological study.

One of the earliest authentic cases is a most interesting one, recorded by M. Gouey, of Rouen, in 1716.

It was a case of gestation in a hernial sac of the right groin. Gouey opened the sac, and extracted an embryo of between two and three months' development. The placenta came easily on slight traction. It had grown to the circumference of the external oblique muscle.<sup>1</sup>

Puech cites this case as evidence in proof of his contention that gestation in this situation is proof of the pre-existence there of the ovary. This theory had been explicitly enunciated by Cruveilhier.<sup>2</sup>

Pott's classical case is almost the first well-attested case (1756). It must be cited on account, not alone of the surgical importance, but also for the interesting physiological phenomena observed.

A girl, aged twenty-three, went to St. Bartholomew's Hospital having a tumor in each groin, which had for several months caused her so much pain that she could not attend to her work. She was healthy, and menstruated regularly. The tumors were soft, uneven, easily movable, and lay externally to the tendinous apertures of the inferior abdominal wall. Pott removed them. From this time forth she never menstruated; her breasts fell away, and the muscular system became developed as in a man.

Desault found in the dissecting room the left ovary, tube, and the uterus in a hernial sac (1779).

Lallement (1816) relates a case, described and figured by Cloquet<sup>2</sup> (1831), of right crural hernia containing the uterus, tubes, ovaries, a part of the vagina, and a piece of epiploon. The hernia had existed forty years. The right ovary had changed to a cyst, and another cyst adhered to it.

Deneux<sup>3</sup> relates a case :

A pluripara, four and a half months pregnant, sustained a fall on her knees and belly; she felt a dragging in the pelvis and right iliac fossa augmented by the movements of the fetus. The suffering continued with varying severity throughout the natural time of gestation, becoming unbearable at the last. During labor it was especially severe. A tumor was found at the inner edge of the left crural arch, irreducible, very tender; no constipation or vomiting. On the seventh day after delivery, the pain had become intolerable, therefore operation for hernia was performed. A hydatid was found, and behind it an ovary. Three-fourths of

<sup>1</sup> This case is cited more fully in the author's "Diseases of Women," 2d edition.

<sup>2</sup> Pathologie Chirurgicale.

<sup>3</sup> Recherches sur les hernies de l'ovaire, 1813.

the cyst and nearly all the ovary were cut off. The suffering was relieved, and the patient recovered.

The chief points of interest in Dr. Neboux's case are the following :

A woman aged 50, after suffering several years with a hernia, was suddenly attacked with symptoms of strangulated hernia. The operation was resorted to. In the bottom of the sac the right ovary was discovered, of the size of a pigeon's egg, of violet color, and strangulated in the internal inguinal ring. In order to make reposition possible, it had to be cut in two places, and a slight adhesion between the ovary and hernial sac separated. Recovery.<sup>1</sup>

Mr. Cesar Hawkins reports two cases :

He operated for femoral hernia of the right side on a lady about sixty-five years of age. She had worn a truss for many years; it had not been reduced for a long time. Symptoms of strangulation set in. Bowel had been incarcerated. The hernia was divided into two parts, one of which felt like omentum. On opening the sac further, it was found to contain the whole Fallopian tube and broad ligament, with a shrivelled ovarium, with five or six inches of intestine. On dividing the stricture, the bowel readily went up, and so did also the uterine appendages, but with some little adhesion to the sac. Recovery.

Of Case II. he says :

"I have a very distinct recollection of my having seen it in the post-mortem room of St. George's Hospital, but I cannot remember that it was my own patient. But I think not. The chief feature noted was the elongation of the uterus; and which, with the Fallopian tube, formed a canal fourteen inches long. The subject was an elderly woman, who died of peritonitis. The Fallopian tube and ovary had been lodged for many years in the hernial sac."

Two cases reported by Dr. Oldham to the Royal Society (see *Med. Times and Gazette*, 1857) are especially interesting.

CASE I.—A girl aged 19 had never menstruated. Eighteen months ago, a swelling suddenly appeared in the right labium; it gave pain and then it disappeared. Four or five months later, a similar swelling again appeared with great pain. It so returned several times. Oldham found a tumor the size of a goose egg between the external abdominal ring and labium, tense, firm; the surrounding tissues inflamed, painful. On the left side was an oval body the size of a walnut just emerging from the outer ring, but readily slipped back into the canal. This was the left ovary; it was quiescent. No trace of uterus or vagina could be found. The mammary glands were fully formed. Dr. Oldham often saw her. She got married. For three years the right ovary was exclu-

<sup>1</sup> Archives générales de Médecine, 1846.



sively enlarged. Then for two years the left ovary was more frequently affected, the right remaining quiescent.

The accession of a menstrual nîsus was sometimes suddenly felt. She would go to bed well, and in the morning the ovary would be swollen; more commonly, however, it swelled very gradually, augmenting in volume for four days, and then gradually declining, the whole process, before the ovary was reduced, generally lasting ten or twelve days. It became doubled in size and it was plain that the whole, not merely a part of the organ was involved. There was no particular suffering at the time. There were no manifest sympathies or vicarious flux.

CASE II.—A girl aged 20 never menstruated; tall, strumous-looking, in weak health; mammæ developed; no marked efforts at menstruation; pelvis fairly formed. The ovary on either side just appearing at the external abdominal ring, readily returned by pressure. Each was about the size of a small chestnut, not tender when touched. No trace of a vaginal canal or uterus discovered.

The late Mr. Holmes Coote published a case.<sup>1</sup>

A young woman was admitted<sup>2</sup> into St. Bartholomew's Hospital with symptoms of strangulated hernia. The ovary and part of the Fallopian tube were found in the sac. A similar formation was found in the right side. The left ovary was removed; thickened omentum was cut away; the sickness and constipation continued. The patient died on the fourth day. The cause of the sickness was assumed to be displacement of the stomach and arch of colon. Both ovaries were developed. She had menstruated regularly. The uterus was quite absent; the vagina was a short canal  $1\frac{1}{2}$  inches long.

Dr. Oettingen relates a case.<sup>3</sup>

A woman aged 41 presented a crural hernia, in which an ovary was diagnosed. On account of peritoneal symptoms, the sac was opened, and the ovary and tube were returned into the abdomen.

Lassus relates two cases (*Pathologie Chirurgicale*). In one, the ovary was excised; in the other, the hernia was reduced successfully.

Dr. Meadows reported a case.<sup>4</sup>

It had been under the care of Mr. Lawson, who has given me the following account, which, in some respects, supplements Dr. Meadows'.

“Oct. 11th, 1877. The patient was a young woman, certainly

<sup>1</sup> Lancet, 1864.

<sup>2</sup> This case is commonly cited in foreign authors as from Mr. Holmes.

<sup>3</sup> St. Petersburg, med. Zeitschrift, 1868.

<sup>4</sup> Obstetrical Transactions, Vol. iii.

not more than 20 to 22. She had been sent to St. Elizabeth's Home about fifteen years ago, looked upon as incurable. There was a small tumor in the right inguinal canal, presenting very much the appearance of an undescended testicle in a man. The complaint was that at each menstrual period the lump became greatly enlarged, the neighboring parts swollen, and the whole excessively painful, so painful indeed as to render her unfit for any employment. Her health in other respects seemed very good, and in the interval she could get about and do moderate work. Thinking that it was probably an ovary in the inguinal canal, I determined to remove it. I selected the time after a menstrual period, and assisted of Dr. Meadows and Alexander Edwards (who is now dead), I cut down upon the ovary, and came upon it and a rather dilated Fallopian tube. The ovary I removed without any trouble, and left the Fallopian tube, but in closing the wound, I passed a hare-lip pin through the edges of the wound and trans-fixed the tube so as to close its orifice and fasten it in the wound. The patient recovered without a bad symptom. She had no inconvenience at the next menstrual period. For several years afterwards I heard occasionally of her; the report was always that she suffered no inconvenience."

Dr. Meadows describes the ovary as having undergone a remarkable change. It presented numerous irregular spaces, varying in size from a pin's head to one-fourth or one-half inch in length, all filled with the same kind of serous fluid as flowed from the pedicle. There were no proper Graafian vesicles to be seen.

Courty has seen :<sup>1</sup>

1. A right inguinal hernia, reducible, probably congenital, in a child, aged ten, whom he lost sight of.

2. A right crural hernia, irreducible, in a single woman, aged forty, swelling and becoming sometimes painful at the menstrual epochs.

3. A right crural hernia in a woman, aged forty-two, who assured him that the tumor, which began about fifteen years before, became bigger and painful at each menstrual epoch, and who succumbed to symptoms of strangulation and peritonitis. The peritonitis was slow, lasting fifteen days. She might have been saved, but she refused all operative help.

Scanzoni has seen a case, inguinal, which swelled at menstrual epochs.

A very instructive case has been published by Dr. Leopold<sup>2</sup> under the title, "Rudimentary Development of Müller's Ducts. Inguinal Hernia of the Left Uterine Horn. Extirpation of this Part and of the Left Ovary. Recovery."

The subject was twenty-eight years old. She had enjoyed

<sup>1</sup> *Traité pratique des Maladies de l'utérus, des ovaires, et des trompes.*

<sup>2</sup> *Archiv für Gynäkologie*, 1879.

good health. Menstrual molimina set in at fourteen, with great regularity, marked by pain, but no menstrual discharge ever appeared. The pain was concentrated in the left groin, and from the first day of the molimen, a mass there, the size of a plum, swelled and became very painful; and then, on the decline of the molimen, shrank to its ordinary size. The pain was so great that she had to maintain absolute rest, and the nervous excitement was extreme. At twenty, she married, and a year later came under treatment. The vagina was dilated by incisions and laminaria tents; but it does not appear that the uterus was reached. The vagina was a short, blind sac. No body resembling uterus or ovary could be felt by this vaginal sac or by the rectum. A menstrual molimen was now (February 4th) observed. The face became congested, and epistaxis set in. Then followed a rigor, teeth-chattering, convulsions of the extremities, and lastly, for some minutes, a tetanoid spasm. Then sweating came on, affecting the left arm and hand, the right side remaining perfectly dry, as did the face and lower extremities. Next day, the face was still tumid. The mucous membranes vividly injected. No fever. The lightest touch on the tumor caused great pain; it seemed larger and more projecting. These conditions had subsided on the fifth day. The woman's suffering had become so intense that she had several times attempted suicide. The tumor was removed. On dividing the peritoneum, what had been assumed to be the ovary was found to be the fundus of the small uterus. From its outer pole arose the Fallopian tube, and from the inner pole, the cord which had been felt before the operation, and which was really the round ligament. No mark of cervix or vaginal-portion of uterus was found. The ovary and tube were first cut away, a ligature having been applied between them and the uterus. It then being found that the uterus was two-horned, the left horn was also cut off beyond a ligature. A drop of clear mucus came from its cavity, which was very small. Nothing remarkable followed the operation. The usual menstrual molimen recurred without distress; the nervous trouble did not appear. Recovery seemed complete.

Minute examination verified the nature of the ovary. It proved that normal development of ova and their extrusion may take place with a rudimentary and closed uterus and defective vagina, and without the smallest blood-effusion in the uterine cavity.

Dr. Beigel<sup>1</sup> thus refers to the subject: The swelling of the prolapsed ovaries happens not only during menstruation, but also during coitus. Out of six cases of ovarial hernia he had observed, two were double-sided crural hernias. The subject of one of these had at every sexual intercourse such intense pains that she was compelled to withdraw from the husband's

<sup>1</sup> Die Krankheiten des weiblichen Geschlechtes, 1874.



embrace. The other subject was quite free from similar trouble. According to her description, the hernias were observed when she was twelve years old. She had gone through two normal pregnancies.

Boinet relates an interesting case,<sup>1</sup> presented by Guersant to the Société de Chirurgie in 1858:

The subject was a child aged three. She had a tumor in each groin, detected six months before. Since then, they had sensibly grown. The right tumor was as large as a pigeon's egg. Both were solid. The left was reducible. At the autopsy, it was ascertained that both iliac fossæ were filled by enormous tumors which touched at the median line. These tumors were the hypertrophied and degenerated ovaries (encephaloid). A portion projected into either inguinal canal. There was no uterus. The vagina was a small *cul-de-sac*.

In a case operated upon by Lassus,<sup>2</sup> that of a child aged five, the size of the ovary was doubled.

Dr. Rheinstaedter, of Cologne, relates the following:<sup>3</sup>

In December, 1877, R. removed from a woman, æt. 68, an ovarian tumor from the right groin, bigger than a child's head, elastic. Attached to and removed with the ovary were the tube and part of the round ligament. There was also intestine in the sac. No uterus could be detected. The woman recovered. A hernia of the normal ovary, which appeared in the same side, was kept up by a bandage. The removed ovary was sarcomatous.

A case of ovarian inguinal hernia, simulating strangulation, is related by C. Raffo.<sup>4</sup> Operation. Recovery.

Scanzoni<sup>5</sup> relates a remarkable case of uterine inguinal hernia, gestation supervening.

The subject first menstruated at twenty-one. When twenty-eight she conceived and was delivered at term of a live child. She bore a second child two years later. Four weeks later, lifting a heavy wine-butt, she fell, and a hernia the size of a walnut appeared in the left groin. It could not be reduced. It harassed her at first, but afterwards did not, except at the menstrual epochs, when it perceptibly swelled. Thus she went on for four years. Then she had typhoid fever, during which profuse leucorrhea and hemorrhage occurred, and the tumor in a short time attained the size of a man's fist. Then it was surmised that the

<sup>1</sup> *Maladies des Ovaires*, 1877.

<sup>2</sup> *Pathologie Chirurgicale*, 1806.

<sup>3</sup> *Centralblatt für Gynäkologie*, 1878.

<sup>4</sup> *Lo Sperimentale*, 1881.

<sup>5</sup> Ein Fall von Hysterokele inguinalis mit hintretender Schwangerschaft. Beiträge: Band 7, 1873.



uterus had entered into the hernial sac. On vaginal examination, it was found that the vagina was drawn up into a long narrowing canal, and that the cervix uteri could not be felt. She conceived again, and aborted; when the swelling, which before was as big as two fists, was quickly reduced to one-half. Eight and one-half months after the abortion she conceived again; the swelling gradually increased. She was now thirty-nine years old, of strong, healthy frame. The tumor got as big as a man's head, and covered the pubes. The fetal heart was not heard in it; but the uterine souffle was. Pains set in, and retention of urine. Provocation of labor was resolved upon. A catheter was passed into the uterus, and three ounces of tepid water injected. A dead fetus and the placenta were expelled. Next day, after-pains were felt in the tumor. The woman made a good recovery. The tumor shrank and became less painful.<sup>1</sup>

Lorinser relates<sup>2</sup>:

The case of a woman, æt. 70, who was seized with vomiting and other signs of strangulation. She had menstruated regularly from the age of seventeen until thirty-two, but had had no children. In the left inguinal canal was a hard tumor the size of a walnut, presumed to be the ovary.

Dr. Loumaigne<sup>3</sup> relates a case. He questions the periodical enlargement of the herniated ovary. He cites some other cases.

Englisch<sup>4</sup> relates two cases of his own, and tabulates thirty-eight cases. Some of these are cited in this memoir.

The following is the history of my own case:

E. S., single, a schoolmistress, æt. 41, admitted to St. George's Hospital, under Dr. Barnes, March 31st, 1877. She had always enjoyed good health. Catamenia punctual, but always scanty and attended by some pain; not subject to leucorrhœa. She sustained a rupture in the left groin at twenty-four, and has since been obliged to wear a truss. About three years ago she first observed a second swelling a little below the old rupture. She had sustained no blow or strain. This mass, she asserts, becomes almost twice its usual size at the menstrual periods; and tender, even painful. It continues in this state for a week at least after the disappearance of the catamenia, and then gradually lessens and can be handled without causing pain. This state of things appears to have been less marked of late. The mass, examined a week after the cessation of menstruation, is rather larger than a pigeon's egg. It occupies the upper half of the left labium majus, and lies obliquely from right to left. It is compressible and

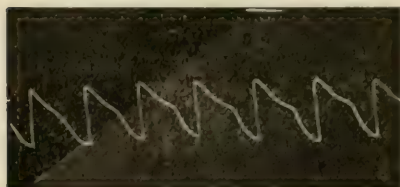
<sup>1</sup> [I was assistant to Prof. Scanzoni at the time, and had full charge of this most interesting case.—ED.]

<sup>2</sup> Ein Fall von Oöphorocele inguinalis sinistra. Wiener Med. Wochenschrift, 1880.

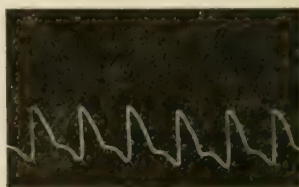
<sup>3</sup> 1869. Paris.

<sup>4</sup> Ueber Ovarialhernien, Stricker's Jahrbücher, Wien, 1871.

movable to a slight extent. Manipulation causes very little pain. Its surface is smooth. Its length is  $1\frac{1}{2}$  inches; breadth,  $1\frac{1}{8}$  inches. It is evidently quite distinct from the inguinal hernia when the latter protrudes. The external abdominal ring is unusually large.

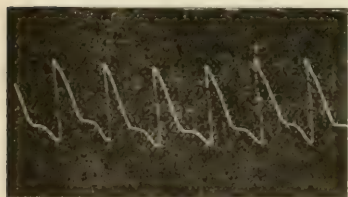


No. 1.—April 20th, three days before menstruation. High tension.

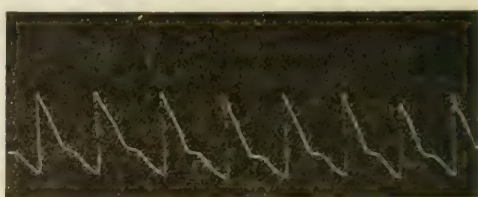


No. 2.—April 24th, menstruating first day. Tension diminished.

April 24th.—The catamenia set in unexpectedly. There is some tenderness and a very slight enlargement ascertained by careful measurement of the tumor.



No. 3.—April 25th, menstruating second day. Tension further diminished.



No. 4.—May 1st, three days after menstruation. Tension disappeared.

Dr. Fancourt Barnes' Sphygmograms illustrating Dr. Barnes' Memoir on *Hernia of the Ovary*.

April 25th.—The tenderness has increased, together with considerable pain down the inner side of the left thigh. The tumor measures in length  $1\frac{5}{8}$  inches; in breadth,  $1\frac{1}{8}$  inches.

April 26th.—No increase of size, less tenderness.

April 27th.—Nothing notable.

April 28th.—Cessation of catamenia.

During the catamenia the temperature ranged from  $97^{\circ}$  to  $98.6^{\circ}$ .

May 19th.—The length of the tumor was  $1\frac{3}{8}$  inches.

May 20th.—Catamenia appeared after very slight premonitory symptoms. Increase of tenderness and pain in the tumor, and down the left thigh; length,  $1\frac{1}{8}$  inches.

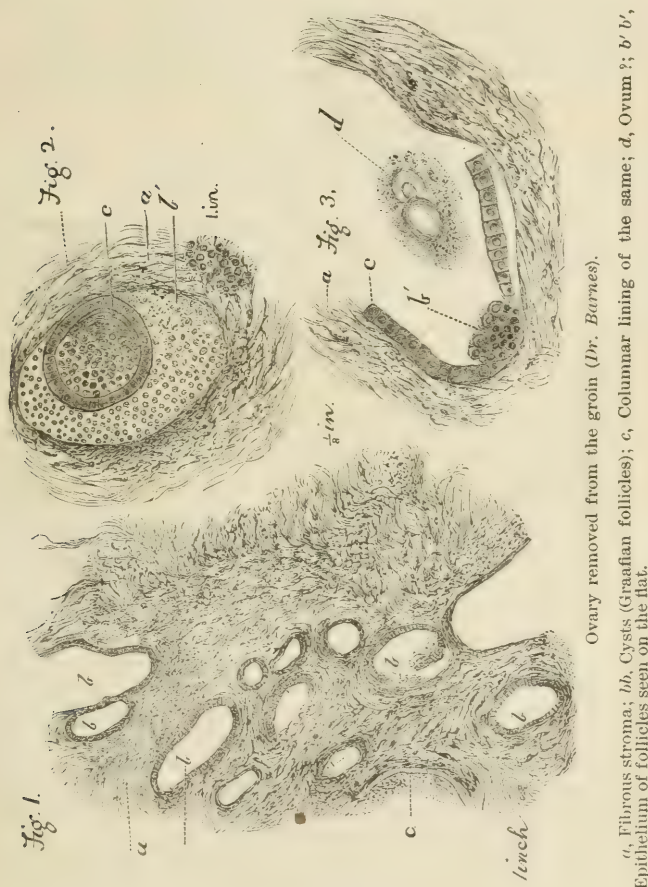
The tumor remained about same size until cessation of catamenia on the 25th.

As the periodical distress seriously interfered with the patient's occupation, and her condition was not free from danger, it was determined on consultation to remove the tumor. This was done by Mr. Pollock on the 7th of June. The tumor was adherent to the surrounding tissues and had to be dissected out.

There was no evidence of any peritoneal connection, nor was any trace of a Fallopian tube seen.

The patient left the hospital at the end of June quite well.

A microscopical examination of the tumor by Dr. Ewart, then curator of the museum, showed it to be an ovary. I further submitted it to Dr. Goodhart, who made a minute examination of it.



The following is Dr. Goodhart's report:

"The mass removed has been so firmly adherent to the surrounding parts that it has quite lost any characteristic appearances of external shape, . . . and it is impossible to say from this aspect what is its nature. But on section it has a very thick fibrous capsule running into a more spongy fibrous stroma without any definite separation. The spongy stroma on more careful



examination is found to be minutely cystic, and in parts has small yellow foci of altered blood-pigment. Under the microscope, the stroma is found to be well formed fibrous tissue. It is honeycombed in all directions by small cysts which vary much in size, and somewhat in appearance. Some are large and with sinuous boundaries, and not lined by epithelium; others have their walls stained or rather studded with yellow pigment grains and cells; the majority have a very regular layer of somewhat square-shaped columnar epithelium (on section the cells are really polygonal); and, lastly, there are many much smaller cysts,  $\frac{1}{800}$  or so of an inch, apparently developing into the larger ones. These features are shown in Figs. 1 and 2. All are lettered the same.

*a*, Stroma of tumor (fibrous).

*b b*, Cysts; some with, some without a lining.

*c*, Epithelial lining.

In Fig. 2 the cyst is oval and the section has caught and displaced a section from a smaller segment, and thus a cyst appears to be within a cyst. The appearance of the lining when viewed *en face* is attempted to be depicted around this (*b'*) smaller cyst, and also in Fig. 3 (*b'*).

Fig. 3 is a section of a cyst under one-eighth inch. It is figured to show, not only the cellular lining and stroma, but the body marked *d*. It consists of a large nucleated cell with a somewhat similar, but non-nucleated cell attached to it, and a granular zone around. Its appearance is peculiar, and one feels inclined to suggest that it may be an ovum; but if so, it would be an instance of a double germinal vesicle—a condition which Waldeyer states he has never seen in a mature Graafian follicle; or, and this indeed is most probable, it has become damaged in the preparation of the specimen, or has developed abnormally or become degenerate under the altered conditions of its formation. I do not, however, lay any stress upon this body, since its nature is at best doubtful. But there can be little doubt, I think none, from the appearance of the stroma, the cysts, and the epithelium lining them, that the mass is an ovary; and this notwithstanding that none of the follicles exhibit a hilum. But this again is no great objection, because the follicles have certainly developed under considerable difficulties, matted as the organ is to the surrounding parts, and there are none which from their size can be considered mature."

A cast was taken before the operation by Dr. Harper, obstetric assistant at St. George's Hospital, at the time.

In this patient the temperature and the pulse showed no variations marked enough to attract attention.

I may incidentally remark that I have frequently noticed increase of temperature and rapidity of pulse at the menstrual epochs in subjects of pelvic inflammation. The increase of size was sufficiently distinct, and there could be no doubt as to the development of pain.



Dr. Barnes' second case:

In October, 1881, a lady was referred to me by Mr. Hunt, of Hammersmith. She had fourteen children, the last four years ago. Since the last child she has been "suffering from falling of the womb;" "it used to come quite down;" she has worn a bandage and pessary; has pains like labor-pains in both groins, and swellings are felt there. Menstruation is profuse, not painful. She first noticed a swelling in the left groin a year ago, and only a week ago a swelling came down in the right groin with intense pain. The swellings feel like ovaries; their long diameter coincides with the direction of the groin; they get tender soon after a period and "burning," but they get tender at other times also. I felt both the tumors distinctly when the patient was lying on her back. When she turned on the left side for vaginal examination, I could no longer feel them; they had returned into the abdomen. The vagina was relaxed; the uterus descended on coughing. I adjusted a Hodge-pessary.

This is an example of acquired double ovarian inguinal hernia reducible. I have not had an opportunity of seeing this lady again. The ovaries might be kept up by a suitable truss. But it is very probable that ablation may become advisable.

In connection with the observation that double hernia of the ovaries is frequent in so-called hermaphrodites, thus simulating testicles, the case presented to the Obstetrical Society (1880) by Dr. Chambers is especially interesting.

A woman, so reputed, aged twenty-four, had observed swellings in the groins as long as she could remember. She had never menstruated or experienced menstrual molimina. There was a short conical vagina at the top of which was the opening of the urethra. No uterus could be found. The herniated bodies were removed; and were pronounced by Drs. Galabin and J. Williams to be imperfectly developed testicles. Sections showed the small tubules characteristic of these structures.<sup>1</sup>

<sup>1</sup> Since my memoir was written, I have seen the very interesting paper of Dr. Swasey, "On an Interesting Case of Malformation of the Female Sexual Organs," in the *AMERICAN JOURNAL OF OBSTETRICS*, January, 1881. In this case, different opinions were formed as to the sex of the subject. Dr. Mundé thought the herniated bodies were testicles, because they presented a subdivision resembling an epididymis, whilst Dr. T. G. Thomas thought they were ovaries. This case, Dr. Chambers's, and others show how closely related the study of hernia of the ovaries is to malformation, and the so-called hermaphroditism. The conditions, however, are essentially distinct. The congenital cases of doubtful sex must be separated from those of true ovarian hernia occurring in the child and adult.

Cases such as those of Dr. Swasey, and one recently (October, 1882) exhibited to the Obstetrical Society by Dr. Fancourt Barnes might not

It is highly probable that, if the extirpated organs in other cases had been minutely examined, bodies assumed to be ovaries might have turned out to be testicles. The want of this examination must impair the value of many recorded cases, and must, at any rate, render it unwise to speculate much upon their anatomical and physiological significance.

The accidental or acquired ovarian hernias are said to be almost always unilateral and more frequent on the right side. They appear to arise most easily after labors when an intestinal or epiploic hernia already exists. This preference for the right side may possibly be explained by the right ovary being situated a little more in the iliac fossa than is the left ovary. This, the left ovary, usually dips more into Douglas' pouch, which is deeper on the left side than on the right.<sup>1</sup>

*The frequency of the coincidence of hernia of the ovary with anomaly of the organs of generation is remarkable.*

In cases of Oldham, Holmes Coote, Moret-Lavallée, Boinet, Rheinstädter, Cazeaux, the uterus was wanting. In Leopold's case the uterus was two-horned.

Another remarkable fact is *the frequency with which extra-uterine gestation has been observed in connection with hernia of the ovary.*

There are several *varieties of hernia of the ovary.* The ovary may escape from the pelvis by the umbilicus, by the inguinal ring, by the crural ring, by the ischiatic notch.

The most common is the inguinal. It is that to which the greatest interest, physiological and surgical, attaches. The first point that strikes one is the remarkable preponderance of inguinal over crural hernia when the ovary is concerned. It has been supposed that this is in contrast with what obtains in the ordinary forms of hernia in women. But Cruveilhier expressly says, that inguinal hernias of ordinary kind are much more frequent in women than is generally believed. Englisch, who omits citing Cruveilhier, shows that of the thirty-eight cases he

inaptnly be called instances of "Neuters," of "missed sexual determination." G. S. Hilaire described "hermaprodisme neutre."

<sup>1</sup> I have made numerous observations on the anatomical peculiarities of Douglas' pouch, which I have not yet had time to describe methodically. They are briefly referred to in a memoir on retro-uterine tumors in St. George's Hospital Reports, 1876) and in the Diseases of Women, 2d ed., 1878.

tabulates, twenty-seven were inguinal, nine crural, one of right obturator foramen, and one ischiatic.

Dr. Engelmann relates<sup>1</sup> two cases of anterior displacement of the ovary simulating inguinal hernia. They call attention to a form of displacement not before described.

CASE I.—S. C., single, aged twenty-four. At nineteen had a severe fall from a window; but had previously suffered from mental and physical weakness. Dysmenorrhea was greatly intensified after the accident. Then for the first time she noticed a painful swelling in the left side. This “lump,” as she called it, has been a source of great misery ever since. The right side is free from pain, whilst the left is always more or less tender, exquisitely sensitive during the period of menstruation; and at this time only is the lump to be observed, although it may sometimes be forced down after standing long or on coughing. As the physiological engorgement takes place a few days before the flow, this “lump” makes its appearance in the groin, in the site of incipient inguinal hernia; then she can scarcely walk, is often forced to remain in bed; she cannot straighten her left leg. She had been unable to wear a truss. She could never lie on her left side, the side of the displacement. She became melancholic, much emaciated. There was a rigid virgin vagina with a small anteфлекed uterus; the right ovary could not be felt, whilst the left was very distinct, anteriorly in the vesico-uterine fold; sensitive; slightly enlarged, easily moved. The inguinal canal was not open. At other examinations when the “lump” was felt prominent externally, the ovary was not felt in the vesico-uterine fold.

Dr. E. removed the ovary by abdominal section. A rapid attempt to feel the right ovary failing, the wound was closed. She made a good recovery and went into service. The “lump” never appeared again at her menstrual periods.

Dr. Engelmann's second case—anterior displacement of the right ovary, at times simulating beginning inguinal hernia, confirmed mental and nervous disturbance; treatment unsatisfactory.

In the discussion on Dr. Engelmann's cases, Dr. Byford mentioned a case of complete hernia of the left ovary. On opening the sac, he found it to be an ovary and removed it. The patient was cured.

Balley relates (*Thèse pour le doctorat*, 1854) a case of right inguinal hernia in a child. Other cases are described by A. K. Hesselbach (*Erkenntniss der Eingeweidebrüche*, Nürnberg, 1849), Zogbaum (*Dissertatio de hernia ovarii*, Jena, 1844),

<sup>1</sup> American Gynecological Transactions, 1880.



Mülert (Zur Lehre von der Hernia ovarii primaria inguinali et crurali, *Journal der Chirurgie*, 1850).

The condition known as *prolapse of the ovary*, in which the ovary, normal or diseased, falls to the bottom of Douglas' pouch, cannot strictly be regarded as hernia.

Small intestine or epiploon may accompany the ovary, as in a case of Cæsar Hawkins, in one operated upon by Cusco, and in many others. But in several cases symptoms of strangulation, compelling operation, have set in where the ovary only was found in the sac.

Where epiploon complicates the hernia, even when there is no intestine, symptoms simulating strangulation may occur, and have been the motive for operation.

In some cases the herniated ovary has been followed by the Fallopian tube and uterus; and cases are even known—Scanzone's and M. Gouey's are cited in this memoir—where the pregnant uterus has been a constituent of the sac.

Schmidt<sup>1</sup> says: 1, that inguinal ovarian hernias are mostly congenital; 2, that congenital ruptures always contain both ovary and tube, whilst the acquired ruptures contain the ovary only. In these last, the broad ligament is generally dragged outwards, and the uterus is drawn near the hernial ring, and therefore the ovary is irreducible. In acquired hernia, the broad ligament is greatly elongated.

Bérard relates a case, which he thinks unique, of the Fallopian tube alone being herniated. The tube was much hypertrophied, the sac was dropsical, puncture was followed by death. Autopsy demonstrated the statement (L'Expérience, 1839).

Closely associated with the history of hernia of the ovary is that of hernia of the uterus. Cruveilhier has studied this subject with his usual sagacity. He says<sup>2</sup> that "authors have completely separated hernias of the ovary from hernias of the uterus. But several cases of hernia of the ovary, which I have had the opportunity of seeing at the Salpêtrière and elsewhere, have led me to admit the following theory upon hernia of the uterus. 1. The hernia of the uterus is consecutive upon a

<sup>1</sup> Die Unterleibsbrüche, Pitha u. Billroth, Handbuch der allgem. u. spec. Chirurgie, 1865.

<sup>2</sup> Anatomie pathologique.



hernia of the ovary and Fallopian tube, and it is by a kind of attraction that the uterus is displaced. The proof is that, in the hernias of the ovary and tube, the corresponding angle of the uterus is drawn behind the internal orifice of the inguinal canal, and even within this orifice. The uterus is distorted, and has undergone a kind of elongation in the direction of the dragging upon this angle. If this theory is true, the hernia of the uterus must always be accompanied by hernia of the ovaries and tubes, and in the first stage there ought to be only one ovary and one tube. It is only in a second stage, when the whole fundus of the uterus has been drawn into the hernia, that the two ovaries and tubes will be found. Now, in the first case of Lallemand, there was only the ovary and tube of the right side. 2. The attraction of displaced ovary and tube is perfectly explained by the intimate connections of these appendages which act upon the uterus like cords, and by an anatomical disposition which does not appear to have arrested the attention of observers. It is this: the displaced ovary and tube are always fixed to the posterior wall of the hernial sac by their winglets; they are never displaced without the broad ligament which supports them, whence it results that the growth of the sac is made partly at the expense of the broad ligament, a new source of attraction of the uterus."

If this theory be true, the study of hernias of the ovary and of their predisposing causes is necessarily applicable to hernias of the uterus, and hernia of the ovary might be regarded as the first degree of hernia of the uterus. Now the presence of the canal of Nuck and its persistence in some women, even of advanced age, appears to me to partly explain, not only the frequency of ordinary inguinal hernia in woman—a frequency far greater than is commonly believed, but also congenital hernia, the accidental hernia of the ovary, but also the corresponding hernias of the uterus, even in advanced age. The position of the ovaries, tubes, and fundus of the uterus above the level of the pelvic brim in new-born children explains how hernia of the ovary has been more frequently observed in early life than in adult age and in old age. In one of Mr. Cæsar Hawkins' cases, the Fallopian tube and uterus were drawn out to form a canal fourteen inches long. These cases demonstrate the extreme ductility of the uterus.

Puech, who has also studied the subject with great care,<sup>1</sup> puts forth similar conclusions. He says: "In order that a gestation may be developed outside the abdominal cavity, it is necessary to suppose that the ovary and Fallopian tube were in the seat of gestation in the first instance; the first to supply the ovum to be fecundated, the second to carry the ovum to the spermatozoa."

Billard<sup>2</sup> dissected a new-born infant, in which he found the round ligament short and thick, and he attributed to tractions made by it the inclination of the uterus and the escape of the ovary by Nuck's canal.

Deneux says<sup>3</sup>: "The canal of Nuck, not often seen in nature, may be produced artificially. He produced its simulacrum by pulling on the round ligament below the ring. The peritoneum is thus drawn out into a canal. Into such a canal he was able to push an ovary in a new-born child. In adults, the canal may have remained open. Anteversion of the uterus, especially when there is obliquity or inclination of one angle of its fundus, will favor hernia in the adult.

Cæsar Hawkins, in a communication to me, also says: "The round ligament more frequently determines the protrusion of the ovary in the groin rather at the femoral ring which it was in my case."

I will now discuss some of the more interesting physiological phenomena by aid of the light derived from the foregoing cases and other sources.

Measurement of the ovary at the time of menstruation has been made in cases of women dying during menstruation. Puech gives three observations:

	DAY OF FLOW.	LENGTH.	TRANSVERSE.	THICKNESS.	
1.	2d.	{ 45mm.	36mm.	26mm.	right ov. Held the
		{ 41	24	12	left ov. vesicle.
2.	3d.	{ 38	29	22	left ov. Vesicle.
		{ 38	18	8	right ov.
3.	Ceased on day of death.	{ 47	30	24	right ov. Vesicle.
		{ 42	20	12	left ov.

Raciborski<sup>4</sup> gives two observations:

<sup>1</sup> *Nouvelles Recherches sur les hernies de l'ovaire. Annales de Gynécologie*, 1878.

<sup>2</sup> *Traité des enfants nouveaux-nés*, 1833.

<sup>3</sup> *Recherches sur les hernies de l'ovaire*, 1815.

<sup>4</sup> *Traité de la Menstruation*, 1868.

LENGTH.	WIDTH AT LEVEL OF VESICLE.	
1. { 41mm.	37mm. right ovary.	Menstruation impending.
{ 39	14 left ovary.	
2. { 50mm.	38 left ovary.	Four days before menstruation.
{ 50	23 right ovary.	

These observations are defective in several interesting points, but they show clearly the fact that the ovary which yields the ovum for impregnation is considerably enlarged.

Verdier (*Traité pratique des hernies*, 1840) relates that, in a crural hernia of the right ovary, the ovary became much swollen at the menstrual epochs.

The round ligaments have been observed to swell during menstruation. Deneux quotes Morgagni as having found them as big as the little finger. Portal also observed them to swell at each menstrual epoch, and that their vessels become much larger during pregnancy. Deneux has several times seen, during pregnancy, these ligaments to form a roll from the inguinal ring to the labium majus as big as the finger, causing marked pain on moving the thighs. The observations of Rainey<sup>1</sup> on the structure and uses of these ligaments will support these observations. His discovery of their muscular structure and contractility will explain the attraction exerted from the fixed ovary upon the angle of the uterus.

It is a point of great interest to determine the order in which the phenomena of menstruation occur. It is certain that the menstrual flow from the uterus is not the primary, nor even a necessary phenomenon. Distinct menstrual molimina occur without any uterine flow at all. In some cases there is no uterus, and in many cases the flow breaks out from the mucous membranes of other organs, constituting vicarious or ectopic menstruation. The exudation of blood thus must be regarded mainly as a provision for giving relief to an overloaded vascular system. This is in high tension. Immediately preceding menstruation we observe a remarkable fulness of the peripheral vessels of the skin, as well of the mucous membranes generally, and commonly great activity of the entire glandular system. This is more marked in the pelvic region, but it is universal. If the discharge cannot take place by the uterus, it is likely to find vent elsewhere.

<sup>1</sup> Philosophical Transactions, 1850.

Now, there must be an antecedent to this peripheral vascular fulness which culminates in the menstrual flow. This must be sought for in the condition of the ovary, or in that of the nervous system. Long before the appearance of the flow, we know that, in many women, various nervous perturbations are manifested. Do these perturbations indicate that some alteration in the nerve-centres is the *primum mobile* in the cycle of menstrual phenomena? This by no means follows. It may be that the first start is given by the ovary, and if this be for the moment assumed, we shall not have much difficulty in finding that the change in the ovary is due to the development and attempted extrusion of an ovum. But we must take into account the periodically recurring tension of the nervous system, which reaches its acme at the menstrual epoch, and subsides on the appearance of the flow to leave an interval of calm, ending with the return of a menstrual epoch. A similar increase of nerve-tension and attendant peripheral vascular fulness is observed in pregnancy. A store of nervous energy is accumulated to meet the unwonted muscular efforts of labor. What determines labor? An eternal problem which has given rise to many ingenious speculations. The solution will probably be found by the study of the analogies to pregnancy presented by menstruation. It seems reasonable to surmise that the impulse to labor given to the tense and irritable nervous centres comes from the ovary.

In the expectation of getting some light upon this question, I instituted sphygmographic observations. These were made by Dr. Fancourt Barnes. His tracings are attached to this memoir. They show that the maximum tension occurred three days before the menstrual flow; that the vascular tension diminished as the flow set in; that it continued to ebb as the menstruation went on, and that all undue tension had subsided on the third day after the flow had ceased.

We are, then, justified in concluding that exalted nerve-tension and increased vascular tension precede and co-exist with the menstrual flow. It remains to find out whether the increased nerve and vascular tension precede or follow, dictate or obey the ovarian molimen. There are facts which may help us to the determination of this question. First, ovulation goes on in many cases where the nervous system and the vascular



system are in such conditions that no menstrual flow occurs, that is, there is no such vascular tension as to lead to exudation; and there is a persistent dulness or torpidity of the nervous centres that refuses to be roused by ovarian stimulus or anything else. Then again we see that when the climacteric is reached, when ovulation is drawing to a close, the periodical exaltations of nerve and vascular tension become irregular, fitful, and at last cease. So far as my measurements of the herniated ovary may be trusted, it must be noted that the maximum size was attained on the first day of the menstrual flow, but pain preceded by two or three days.

Many familiar facts point to the inference that the *primum mobile* is the ovary. Sense of distress in the pelvis is commonly the first fore-runner of other nervous phenomena, and may precede by some days the appearance of the catamenial flow. The history of the formation of the menstrual decidua is quite in accordance with this hypothesis. The uterine mucous membrane is observed to swell, thicken, and become engorged some days before the flow, and this change can only be in obedience to ovarian stimulus. It does not take place when there is no ovary, or at epochs when the ovary is not in function, whilst the ovaries may go through all this periodical work notwithstanding the absence of the uterus.

A point that cannot be pretermitted in this discussion is the *acquired influence of habit*. When certain processes have been repeated month after month for years, there is established so great a proclivity to this repetition that some phenomena will often recur, even when one or other of the generally associated phenomena fail. Thus the habit of losing blood every month may continue long after the ovaries have ceased to work, even after they have been removed. This does not prove, as has sometimes been conjectured, that the menstrual flow is not dependent upon ovarian action. It may be explained on this theory of *habit*. The succession of events, originally started by one particular event, have so entered into the life of the system that they cannot easily be suppressed. The accumulation of blood, for example, must be relieved. The nervous system, long accustomed to act at definite intervals in a particular manner, gathers up the accustomed store of energy, and this will explode on the faintest suggestion of the original

stimulus. As in numerous other examples of automatic or reflex nervous action, movements strictly reflex are evoked by forces so slight that they escape recognition.

The recent experience, now accumulating, of the removal of the normal ovaries, ought to supply valuable, if not conclusive evidence upon this question. Dr. Savage, of Birmingham, informs me that, as far as his observation, necessarily imperfect, of the histories of his patients after operation extends, menstruation mostly ceases. But a close study of patients from whom both healthy ovaries have been removed ought to be instituted. What is desirable is this: Sphygmographic observations ought to be taken frequently before the operation, and continued for some months afterwards, and the two sets of observations compared. Should the periodical rise of nerve and vascular tension fail after the removal of the ovaries, we should possess almost final proof that it is in the ovaries we must seek for the *primum mobile*.

As to the effect of ablation of both ovaries, Köberlé says: "The subjects may be regarded as women who have suddenly attained the menopause. The affective sentiments remain untouched. They are no longer under the dominion of an imperious erotic want; but they are not the less good, loving towards relatives and husband. The genital organs remain excitable. The character becomes gentler, less irascible. The breasts do not atrophy. They are not disposed to fatten unless so inclined before. Hair is as before. The tone and voice unaltered. In one woman who had been subject to hysteria, the disorder disappeared on ablation of the ovaries and part of the uterus. The beneficial effect resulting from the ablation of herniated ovaries, seen in the relief of severe nervous disorders, is very striking.

The *diagnosis* of ovarian hernia is not well settled. Englisch observes that the diagnosis is not difficult when the herniated ovary is in normal condition, and exhibiting its functional changes; but that it may be very difficult when the ovary is inflamed or diseased, and the hernia is complicated with bowel or omentum. In many instances, the true nature of the case was discovered accidentally on dissection after death, or after laying open the containing sac, the ovary having up to that moment been mistaken for some other body. A

careful examination of the cases cited in this memoir will throw considerable light upon this question. The general features have been well described by Deneux. The herniated ovary presents a small ovoid tumor, circumscribed, resisting, without change of color of skin, and always more or less painful; its size rarely exceeds that of a pigeon's egg; pressure increases the pain, and this pain is commonly propagated to the pelvis in the direction of the broad ligament to the uterus. The uterus itself is often deflected, so that its fundus is inclined towards the opening whence the ovary escapes. If the patient stands up, or lies on the opposite side, the pain is increased, and is attended by a sense of dragging. This kind of hernia is attended neither by vomiting, colic, nor constipation, and does not by itself return into the abdomen.

In addition to these signs described by Deneux should be mentioned the following: On pushing the vaginal portion of the uterus forward against the symphysis pubis, so as to stretch the broad and round ligaments, pain is experienced in the region of the tumor, and movement is imparted to it. The tumor is observed to become especially painful and enlarged on the advent of menstruation, the pain and swelling subsiding when the menstrual flow sets in.

It must, however, be borne in mind that inguinal glands, as well as glands in other parts of the body, often swell notably under ovarian menstrual nismus. So this sign, so very characteristic often, must be controlled by the presence or absence of other signs. Glandular tumors, moreover, are usually more mobile, rarely single; are unaffected by abdominal movements, or by traction from the uterus.

We are familiar with the swelling of the breasts on the advent of menstruation. The tonsils commonly enlarge, and in the case of vocalists, I have known this swelling so troublesome as to compel suspension of singing. I have a lady under my care with enlargement of the thyroid gland. This distinctly enlarges two or three days before every menstrual period.

The herniated ovary is liable to become inflamed, and to contract adhesions with the sac, so as to shut off communication with the abdominal cavity.

Before or after the ovary becomes herniated, it may undergo

any of the known forms of degeneration, as sarcoma or cystoma.

Disse relates<sup>1</sup> a remarkable case of a woman who had a hernia in the right groin of the ovary in cystic degeneration. She had several children. Guersant relates a case<sup>2</sup> of a girl æt. 3, who had double ovarian hernia. She died. The ovaries were large and cancerous, projections from them were engaged in the inguinal canals.

The *surgical treatment of hernia of the ovary* seems to be indicated with sufficient precision from the history of the cases recorded. At one time it was considered hazardous to remove the herniated ovary. Puech thought amputation should be the last resource. But most of the cases in which it has been resorted to have been successful; and it cannot be doubted that the greater experience now possessed of operations of this nature, must greatly increase the security. Where signs of strangulation set in, there is no room for hesitation. Even if it should appear that the ovary is reducible, it will generally be preferable to remove it than to return it into the abdomen. When the ovary is herniated it is the occasion of infinitely greater pain than is intestine. A truss cannot be borne when the ovary is down; and it is not easy to adjust a truss so as to secure against descent. And when there is not strangulation, the pain has often been so intolerable as to make amputation necessary. And where pain and symptoms of strangulation do not compel surgical interference, the nervous disorders are often so serious that removal of the offending organs will be justified. Whatever decision may be ultimately come to about normal oöphorectomy on other grounds, it seems impossible to dispute that the removal of the herniated ovary is at any rate a legitimate operation.

I have but few observations to offer upon the mode of operating. It falls within recognized surgical rules. The proceeding must be modified according to the conditions of the case. If the ovary have been long continuously in the hernial sac, whether it have acquired adhesions or not, it will be better to cut down upon it in the groin in the way usual for hernia. When the sac is continuous with the peritoneal cavity, it will

<sup>1</sup> Monatsschr. für Geburtskunde, 1857.

<sup>2</sup> Bulletin de la Soc. de Chir., t. viii.



be advisable to apply a ligature upon the tube and broad ligament before amputating. It will also be proper to imitate Mr. Lawson's example, in passing a suture through the cut end of the tube, so as to maintain it in connection with the wound.

In the case of easily reducible ovary, the preliminary question will arise as to relative expediency of cutting down upon it from the groin, or of opening the abdomen, as in the ordinary operation for ovariectomy. If the groin operation be done only to find that the ovary has retreated into the abdomen, it would then have to be sought by opening the abdomen. To avoid this risk, a long needle might be passed through behind the ovary before opening the sac, to prevent its retreat.

Where it becomes necessary to remove the ovary, which has not found its way into the inguinal canal or where it appears there only partially and occasionally, as in Dr. Engelmann's cases, Battey's operation by abdominal section is the only resource. The surgical treatment is discussed with special care by Englisch. Antiseptic care is necessary as in other forms of oöphorectomy.

The subject of hernia of the ovary, so interesting in many other respects, will supply a specially important chapter in the history of Battey's operation—an operation which under increasing physiological and pathological knowledge, is already emerging from the doubtful domain of experimental surgery.

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PERSISTENT SALIVATION, APPARENTLY DUE TO LACERATION OF THE CERVIX UTERI; OPERATION; CURE.

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BY

H. W. LONGYEAR, M.D.,  
Detroit, Mich.

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THE following case of laceration of the cervix uteri I present to the profession, because of the peculiar nature of some of the nervous symptoms resulting from it.

Mrs. H., aged thirty-two, full habit, mother of four children, has had several miscarriages, three of which have been since the

birth of the youngest child, three years ago, and at about the end of the third month. Patient is of a highly nervous temperament. Her grandmother was insane several years before her death, and the patient resembles her in many respects. She has been under the care of Dr. D. O. Farrand and myself during the past eight years, during which time she has had several periods of illness, when it has been necessary to administer morphia hypodermically—at one time to the extent of  $\frac{1}{4}$  grain, four times daily for two months, each hypodermic injection containing also  $\frac{1}{100}$  grain atropiæ sulph. The hypodermics were given because of idiosyncrasies of the patient preventing the administration of remedies by the stomach. The discontinuance of the narcotic, at these times, was never attended by evident inconvenience to the patient.

On March 29th, 1881, the patient had an attack of diphtheria, which lasted about two weeks, after which she had several hysterical attacks, the most severe of which was a distressing spasm of the glottis. This was relieved by chloroform inhalations. During the course of the diphtheria, and occasionally afterwards, for several days, the hypodermics of morphia and atropia were given. At the end of a week, after convalescence had begun, she took a carriage ride, and reported to me afterwards that she had been troubled, during the ride, with saliva collecting very rapidly in her mouth, compelling her to spit constantly. I saw her in the evening, and she was then spitting somewhat, and was in an extremely nervous condition. I injected, hypodermically, morphiæ sulph. gr.  $\frac{1}{8}$ , atropiæ sulph. gr.  $\frac{1}{100}$ , which stopped the salivation and quieted her very quickly. For five days after this, she had a repetition of the salivation daily, requiring the hypodermics but twice, however. At the other times, the flow of saliva ceased, when the patient became quiet at night. On the sixth day after the commencement of the salivation, she had a miscarriage, much to my surprise, as it was the first intimation I had that the patient was pregnant. The placenta was retained, and was removed the following day. After this the salivation continued constantly, excepting when the patient was under the influence of the hypodermic injections, and was attended with a frequent desire to micturate, dysenteric evacuations every morning, and occasional severe pains in the epigastrium. Innumerable remedies were tried, both by the stomach and hypodermically, but with no beneficial result. Morphia and atropia given by the stomach, even in large doses, had no effect on the salivation. On several occasions, without the knowledge of the patient, I diminished the amount of the morphia and atropia in the hypodermics gradually, from day to day, at the same time giving extract of coca and nuxvomica at one time, and various nerve sedatives and tonics at other times, but with each such trial the salivation increased as the narcotic was decreased, and the patient soon presented a deplorable condition of nervous exhaustion. The combination of the morphia and atropia seemed to be necessary, as either, given alone, did not control the flow of saliva. At one time the dose of

morphia was gradually decreased, and the atropia left the same, and *vice versa*, but without benefit. Up to the following July, we had worked on the theory that the salivation was produced by a perversion of nervous action, due to some lesion of the nerve-centres, resulting from the diphtheria. At this time I examined the womb and found extreme hyperesthesia, great cervical hyperplasia, granular condition of the mucous membrane of the cervical canal, a deep posterior laceration of the cervix, and antelexion of the womb. An application of Churchill's tincture of iodine was then made, once a week, excepting during the catamenia, for two months. At the end of this time, the cervix had improved very much in appearance, but the symptoms of the patient remained much the same as before, excepting the dysenteric trouble, which now only occurred occasionally. The patient was now able to sit up a few hours every day, and it was decided to send her East for a change of air and scene. Before going, she was taught to use the hypodermic syringe, and the instrument was given to her mother, who accompanied her, with instructions to allow its use for the salivation only. When the patient returned, after a two months' absence, she was considerably stronger than when she went away, but otherwise her condition remained the same. She now took  $\frac{1}{2}$  grain of morphia and  $\frac{1}{15}$  grain of atropia, two or three times a day, being about double the amount she took before leaving home. She was very thin, and had a worn and haggard look. The narcotic seemed to be losing its power over the salivation, as it would sometimes commence within half an hour after it was stopped by the hypodermic, if anything occurred to excite or weary her. I now concluded that the laceration was the cause of the trouble, and decided to operate as soon as possible. Owing to the apprehensions of the patient, the operation was deferred, from time to time, until April 13th, 1882, when, with the assistance of Drs. D. O. Farrand, Tappey, and Gailey, I performed the operation. The mucous membrane of the cervical canal was now in a healthy condition, and the edges of the laceration had cicatrized, even to the bottom of the angle, which reached to the vaginal junction. I operated by removing a V-shaped piece, with the double-edged angular bistoury, and uniting the opposed surfaces with four silver-wire sutures. On the tenth day, the sutures were removed, when the wound was found to be completely healed. The hypodermics were continued until the fourteenth day after the operation, when they were diminished gradually—each syringe containing  $\frac{1}{16}$  less than the preceding—for five days, when they were stopped entirely. During these five days the patient was quite nervous, but by giving two grains of the extract of coca, every two hours, the nervous symptoms were controlled very well. The coca was given irregularly, as occasion demanded, for several weeks afterwards. The salivation subsided gradually, and, at the time the hypodermics were stopped entirely, it had nearly ceased, the patient then spitting only a little thick mucus. She was kept in bed three weeks after the operation. The patient

continued to improve, gaining strength quite rapidly, and was soon able to be about her usual home duties. At the present time—five months after the operation—she has had no return of the salivation.

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OBSERVATIONS REGARDING THE EFFECTS OF TRACHELORRHAPHY ON FERTILITY AND PARTURITION.

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BY

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So much, of late, has been written and spoken concerning lacerations of the cervix uteri, and such minute details given of the operative interference necessary to remedy the lesion, that one cannot help asking, *quid prodest?*

In our desire for knowledge, we must look to our seniors in the profession for advice and counsel to direct us, in order to select that which is healthful, and to avoid that which is baneful.

In no branch of medicine does this line of conduct serve more surely to protect us from harm than in this special work of gynecology.

When, in the ambitious mood that usually sways the ardent seeker after fortune or fame, he learns that some pioneer has been successful, and opened up hidden treasures, he is tempted without due thought to undertake a journey into that unexplored region where the guides are few, and the way beset by many dangers. If a successful ovariectomy has been performed, the youthful gynecologist who, perchance, has never served a year's apprenticeship, must try his fortune at an operation which even Spencer Wells will not undertake unless surrounded by all the protecting influences science has donated. If the patient should perchance recover, as they sometimes do even when handled as mercilessly as a bullock in the shambles, he cries Eureka! and puts down in one of the leading journals the successful termination of a brilliant surgical achievement. And so on, through all the other operations, from laparotomy to laceration of the cervix uteri. In these days of progress



and development, every man is a specialist in diseases of women, and the uterus, alone of all other organs, is singled out for special treatment. Why this should be so, I cannot for the life of me determine. Reasoning from analogy.

In the animal kingdom, where conception is the rule and parturition the result, we do not find the female broken down in body and ill at ease in mind. *E contra*, she seems to flourish and wax strong with no ectropion of the cervix or rupture of the perineum. Now, why so many females of the human species have all the countless affections given them by the gynecologist, I cannot even surmise, and I fear I shall never arrive at that perfection where it will be given me to appreciate why a laceration of the cervix, by being repaired, will probably prevent cancer of the womb. Emmet's operation is doubtless the treatment in extensive lacerations of the neck of the womb; for, the destruction of continuity in its tissue interferes with the circulation and, as a consequence, hypertrophic enlargement ensues, with prolapse and tendency to displacement, on account of the weakened condition of the ligamentous supply. Hence, not only are you compelled, in the majority of instances, to vivify the separated edges of the wound, but you are also obliged to remove a portion of the hypertrophied and indurated tissue. This removal must of necessity have great weight, not only in its effects upon conception, but more especially in parturition. In view of this fact, I have endeavored to collect all the cases where, after the operation for laceration of the cervix uteri, conception took place and the condition of the parts after delivery were noted. Fancy my astonishment to find throughout all the literature of the Surgeon-General's Office touching this particular point, eleven cases only recorded. They are as follows:

ELWOOD WILSON. (MONTHLY SUPPLEMENT TO AMERICAN JOURNAL OF OBSTETRICS, No. 1, Vol. xv., p. 23.)

"In another case, a rapid birth, during the absence of the physician, caused a laceration of both cervix and perineum. Menstruation was profuse for two years. It was cured by operation, and an after-labor was safely passed through four years later."

GEO. T. HARRISON, Assistant Surgeon New York Woman's Hospital. (*Virginia Medical Monthly*, No. 9, Vol. i., pages 526, 527.)

"Case operated upon March 6th, 1872. In the following December 23d, was called to see Mrs. McK., who thought that labor had set in. Found uterine contractions recurring at short intervals, but apparently with little effect in dilating the os uteri; in fact, there was considerable rigidity of the tissues of the os. The uterine action was arrested till the tissues were softened by enemata of opium per rectum, repeated according to the urgency of the symptoms, and to hasten the process of softening, copious and warm vaginal injections were used. I examined the os every day, with two exceptions, until December 31st, when labor began in earnest, and found that the tissues softened down regularly and progressively. Labor proceeded normally, and the patient was delivered of a fine boy."

CLINTON CUSHING. (*Pacific Medical and Surgical Journal*, No. 4, Vol. xxii., p. 164.)

"On April 1st, 1878, assisted by Dr. Wheeler, the patient (Mrs. Mary G., æt. 23) was etherized, the edges of the laceration freshened and drawn together with silver wire. The sutures were removed on the eighth day, and union found to be perfect. Within the following month, she became pregnant, and I delivered her safely at full term during the past winter. I found, six weeks after her confinement, upon making an examination, the uterus to be normal, no recurrence of the trouble having taken place."

W. GILL WYLIE, New York. (*AMERICAN JOURNAL OF OBSTETRICS*, No. i., Vol. xv., page 77.)

"I have seen three of those operated upon that have since borne children; in all, the cervix remained intact, and I detected no apparent change, except that in one case the cervix was flattened out, but was healthy."

WM. GOODELL, Philadelphia, Pa. (*AMERICAN JOURNAL OF OBSTETRICS*, No. i., Vol. xv., page 122.)

Reports in his notes of one hundred and thirteen cases of operation for laceration of the cervix uteri: "Many of my cases of bilateral laceration, but not all, had become sterile after the receipt of the injury, but the exact number has not been accurately recorded in my notes. Of those whose track I could keep after the restoration of the cervix, four very shortly afterwards became pregnant. In three of these the laceration was not reproduced; in one a tear occurred on the left side, but not of sufficient extent to warrant an operation."

A. MARTIN. (*Wiener Med. Wochenschrift*, August 6th, 1881, page 911.)

Woman, thirty years old, had had a child born one year before, labor being difficult. Had complained ever since that birth. Symptoms: pain in loins and right side, whites, laceration in right side of cervix. Operated, January 12th, 1880. Result, good;

mouth of uterus reduced to a small transverse slit. August 28th, scar scarcely to be seen. Pregnant. March 8th, 1881, in spite of warning, was confined without medical attendance. Nurse urged to press down. Delivery rapid. Laceration of right side of cervix a second time. Lips not everted.

To this list I have to add three cases in my own practice.

CASE I.—The wife of a physician consulted me for some uterine trouble of long standing. She had been treated for several years, locally, but without relief, and she now determined, if possible, to try and get well. She complained of constant backache, leucorrhea, and a dragging sensation as though her insides were falling out, especially on ascending and descending steps. Her youngest child was six years old, and she might say from his birth she had not been well. Upon examination I found the uterus prolapsed, with partial cystocele and hypertrophic enlargement of the uterine tissue, and a bilateral laceration of the cervix, the rent anteriorly extending as far as the vaginal junction.

After considerable preparatory treatment, consisting of rest, vaginal baths, and such constitutional treatment as the case demanded, together with the use of a properly adjusted pessary, the cervix became sufficiently softened to permit an operation for the closure of the rent. Assisted by Drs. J. O. Stanton and J. McV. Mackall, I performed Emmet's operation for laceration of the cervix.

The result was all that could be desired, and in a few months the patient became pregnant. I removed the pessary at about the fourth month of gestation.

During the first six months there was constant nausea and I feared a miscarriage. She, however, went to full term.

Labor began with the usual premonitory symptoms, but the first stage was unusually protracted, owing to the slowness with which dilatation of the os progressed. After considerable manipulation with lard and finger dilatation, I succeeded in overcoming the rigidity of the circular fibres; the labor then progressed rapidly and a fine male child was born. I examined my patient three weeks after delivery and found a laceration anteriorly only, and that not so extensive as in the former condition.

CASE II.—Mrs. A., aged thirty-eight years, a German lady, came under my care in the winter of 1880. She complained of being very nervous and fretful, which for her was very unusual. Constant pain in back and hips, uterine tenesmus, leucorrhea, and a profuse flow at monthly periods, which were very irregular, and always obliged her to keep in bed since the birth of her first child which was five years ago; appetite very capricious, and her bowels never moved without medicine.

Examination with Sims' speculum showed a cervix about four times the normal size, with a bilateral laceration and everted lips which were denuded of epithelium and bled freely upon the slightest pressure. A tenaculum placed in the outer margin of



each lip, could with difficulty approximate the rent, owing to hypertrophy incident to impeded circulation.

I advised her to enter the hospital for treatment, which she did, and remained six months, at the end of which time she was in a proper condition to have the laceration closed.

The operation was performed on March 10th, 1880, and on the following June she became pregnant.

At the fifth month she miscarried, the cervix remained intact.

In March, 1882, she again became pregnant and miscarried August 16th. The cervix still intact.

Mrs. A. suffers from malarial fever during the fall of each year, and I think that is the cause of the repeated miscarriages.

CASE III.—Mrs. G., a native of Georgetown, D. C., was delivered of her first child with forceps. Bilateral laceration occurred, for which I operated, and she became pregnant three months later. I was engaged to attend her in this confinement, but she removed to a distance which prevented me from so doing. I have not seen her since her confinement.

In the cases recorded by Drs. Wilson and Harrison, there is no mention made of the condition of the cervix after delivery. Dr. Wylie reports three cases, where, after repair and subsequent delivery, the cervix remained intact, and Dr. Cushing records a like result in one case.

Dr. Goodell had operated one hundred and thirteen times when this paper was commenced, and the probabilities are that ere now the number has reached two hundred. He reports of these but four where pregnancy ensued, and of these four, one sustained injury in a subsequent labor.

In Dr. Martin's case, laceration occurred a second time. Thus, in the recorded cases, fourteen in all, eight did not sustain subsequent laceration, three were not examined after labor, and three were torn in a subsequent labor.

The conclusions deducible from the statistics furnished, are:

1. That repair of lacerations of the cervix uteri is usually followed by sterility.

2. That the character of the labor is unusually severe and protracted, and that, in a large percentage, laceration occurs a second time.

3. That, in order to ascertain the benefit of surgical interference in such cases, an examination should be instituted several months after the operation, to determine the condition of the cervical canal, and, if conception has taken place, the condition of the cervix following delivery.



I beg to return my sincere thanks to Dr. D. S. Lamb, Army Medical Museum, for the statistics used in this paper, and for many other favors of a similar character.

In the *Boston Medical and Surgical Journal*, Nov. 9th, 1882, in a paper read by Dr. William H. Baker before the "Boston Society for Medical Improvement," the subject alluded to in the preceding pages is discussed at some length, and will receive our attention in a subsequent article.

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#### ADDITIONAL REMARKS ON GASTRO-ELYTROTOMY, WITH SPECIAL REFERENCE TO PORRO'S OPERATION.

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BY

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SINCE I wrote my monograph on Gastro-elytrotomy, which was published in the October and November numbers, 1878, of the *New York Medical Journal*, and reprinted as a separate pamphlet by D. Appleton & Co., the operation has been performed three times for the delivery of parturient women and once for the removal of a calcified fibroma.

Dr. Thomas Whiteside Hime, of Sheffield, England, published his case in the *London Lancet*, Nov. 9th, 1878, and Dr. Arthur Edis, of London, his in the *British Medical Journal*, Nov. 26th, 1878. The chief features of these two operations are mentioned by Dr. Walter R. Gillette, after the description of his own case, in this JOURNAL, 1880, vol. xiii., pp. 98 to 105.

Although the English operators lost their patients, both speak favorably of the operation. Dr. Hime says: "Considering the easy nature of the operation, the certainty of saving the child, and the strong probability of saving the mother, it is a question how far craniotomy will again be justifiable, and whether Cesarean section should not drop into oblivion." Dr. Edis believes that "the issue would have been the same if Cesarean section, or even cephalotripsy had been performed, and that the operation of laparo-elytrotomy will supersede that of

Cesarean section, and also, in many instances, that of cephalotripsy."

Dr. J. T. Everett's ingenious and successful adaptation of gastro-elytrotomy to the removal of a large calcified fibroma (as described in this JOURNAL, 1879, vol. xii., pp. 700 to 707) shows that the usefulness of this operation extends even beyond the limits of obstetrics.

Leaving out this case as not complicated with the peculiar circumstances of pregnancy, parturition, and the puerperal state, we have eight operations, with four recoveries and four maternal deaths. The children were all saved, except the two that had died long before the operation was undertaken, the one having been destroyed by craniotomy (Skene), the other being in a state of decomposition (Gillette).

We might go into details, and point out in what miserable condition those women were who succumbed, Dr. Thomas' patient being in articulo mortis from pneumonia, Dr. Skene's being in a state of exhaustion and shock, caused by forty-eight hours of labor and various operative interferences; Dr. Himes' suffering from ulcerated cancer of the recto-vaginal septum, and Dr. Edis' being a flabby unhealthy subject with very defective rallying powers and edematous extremities. But even as it is, the result compares favorably with that of the rival operation of Porro. According to Dr. Harris, whose accuracy as statistician in regard to Cesarean section and its substitutes is now world-renowned, the latter has been performed eighty-four times, with the result of thirty-seven recoveries and forty-seven deaths, that is to say, a mortality of fifty-six per cent. It seems, therefore, to be time that the obstetricians on the European continent should turn a little of their favor from Porro's operation to gastro-elytrotomy in its new shape, as successfully performed by three different operators, none of whom had seen the other do it. We are obliged to look to Europe for a larger number of cases, on account of the great scarcity of material in this country. Dr. Harris<sup>1</sup> has shown that in the United States, with its fifty millions of inhabitants, there are little more than three cases a year calling for Cesarean section or its substitutes. The great majority of these cases

<sup>1</sup> Am. Journ. Med. Sci., July, 1882, vol. lxxxiv., p. 194.

<sup>2</sup> Ibid., April, 1880, vol. lxxix., p. 356.

will occur in country practice, under circumstances which do not admit of operations requiring much assistance and careful after-treatment. Here, in New York, contracted pelves are of so rare occurrence that, even in the Maternity Hospital, high forceps operations and turning, not to speak of the greater operations, are rarely called for; while the Santa Caterina Hospital, of Milan, with the same number of confinements, somewhat more than four hundred a year, has had six Porro operations in three years.<sup>1</sup>

The chief objection to gastro-elytrotomy seems to be that it cannot be carried out strictly according to the rules of antiseptic surgery, but when we see a greater number of patients succumb to Porro's operation, although it has everywhere been performed with the strictest observance of all antiseptic precautions, than to Thomas' operation, would it then not be worth while to give the latter a fair trial?

Besides, it must not be forgotten that, if the operation of gastro-elytrotomy does not admit of Listerism to its full extent, it can nevertheless derive great benefit from the principles laid down by Mr. Lister. The operator can disinfect himself, his instruments, and his patient before the operation, and can greatly enhance the chances of recovery by syringing the wounds with carbolized water and using antiseptic material for the dressing. It is probably better not to unite the abdominal wound by stitches, as recommended in my monograph, or at least to leave an opening in either angle for the introduction of a finger-thick drainage tube.

The large number of assistants desirable for the most perfect and easy way of operating, namely, five, may be reduced to two, one of which is charged with anesthetizing the patient, as actually done by Dr. Hime. No instruments outside of the common obstetrical armamentarium are needed.

I have nothing to add to, and nothing to retract from what I have said in my monograph (pp. 60-61) about the comparative dangers of the old-fashioned Cesarean section and gastro-elytrotomy.

At that time, Porro's operation had only been performed a few times, and Müller's not at all. These operations have now been done so often, and have met with so much favor both in

<sup>1</sup> *Am. Journ. Med. Sci.*, July, 1880, vol. lxxx., p. 130.

regard to practical execution and to theoretical reasoning, that the time seems to have come for a direct comparison between them and Thomas' operation.

*Comparison between Thomas', Porro's, and Müller's Operations.*

We have seen above that the results of both kinds of oöphoro-hysterectomy combined are less good than those of gastro-elytrotomy, the mortality being fifty-six per cent against fifty per cent, but the number of operations according to Dr. Thomas' method is yet so small that the next may turn the scale in favor of Porro's and Müller's. Indeed Müller's modification of Porro's operation has already given as good results as Thomas', having been performed twelve times with the saving of six mothers.<sup>1</sup>

But as all these three operations have been performed in too small a number of cases to give a sure foot-hold for the statistical method, I deem it much more useful to compare the difficulties and dangers which have been actually met with, or which may be anticipated in their performance.

*Hemorrhage* has not occurred once in Thomas's operation (I leave, of course, out of consideration the earlier attempts of Ritgen and Baudelocque, who cut instead of tearing the vagina), and on account of the anatomical fact that not a single vessel of any importance is divided, it is very unlikely that it should ever give much trouble. The enlarged vessels running between the two layers of the broad ligament, the uterine at its inner border, and the internal spermatic at its upper border, stay behind and above the incised and torn parts. In Porro's operation, there is all the danger of severe or fatal hemorrhage connected with the incision through the wall of the pregnant uterus with its large venous sinuses—an incision which often even reaches the placenta. In one of Lucas Championnière's cases,<sup>2</sup> the uterus bled profusely on incision. In Dr. I. E. Taylor's case, at the time the incision was made through the uterus, considerable hemorrhage occurred, and the pulse disappeared, as stated by Dr. Gillette<sup>3</sup> who attended to

<sup>1</sup> R. P. Harris, *Journal Med. Sc.*, April, 1881, vol. lxxxii., p. 516.

<sup>2</sup> *AMER. JOURN. OBST.*, 1880, vol. xiii., p. 656.

<sup>3</sup> *Ibid.*, 1881, vol. xiv., p. 423.



this part of the operation, and brought the woman to by injections of brandy into the jugular vein. It is true, Halbertsma, of Utrecht (Holland),<sup>1</sup> has succeeded in ascertaining the seat of the placenta on the anterior wall of the uterus by aid of explorative punctures with a trocar, and to avoid hemorrhage by making his incision as far as possible over to one side of the uterus; but, apart from the attending danger to mother and child, it seems very doubtful if this can be done in every case, and by removing the incision from the middle line to the side of the uterus, we risk to wound the large branches of the uterine artery, which go off from the main trunk under right angles, and enter the edge of the uterus, one above the other, all the way up from the cervix to the fundus.

In Müller's operation, the danger of hemorrhage is avoided by the application of the ligature to the cervix, before the opening is made in the uterus, but this operation has other drawbacks. It is not always possible. Wassaige,<sup>2</sup> in his second case, tried in vain to get the uterus out of the abdominal cavity. The long incision necessary for turning the uterus at full term out, is in itself a danger. The children, in consequence of the constriction applied to the cervix before delivery, are commonly asphyxiated,<sup>3</sup> and have to be revived.

If the hemorrhage, caused by incising the uterus in Porro's operation, has been found very dangerous, the difficulty of arresting the hemorrhage from the stump has, likewise, proved very great in several cases. When Fehling<sup>4</sup> attempted to constrict the wires with Cintrat's *serre-nœud* ligateur, the tissues tore as if rotten, and Sp. Wells' ovariectomy clamp had to be applied in order to control the hemorrhage. In the case of C. Braun,<sup>5</sup> a similar constrictor was used, but the next day it became necessary to add thereto a Wells' clamp. In the above-mentioned case of Wassaige, the chain *écraseur* of Chassaignac was used. The chain cut through, causing considerable hemorrhage at the time, and although the pedicle was fastened with a rod to the abdominal wall, and singed with Paquelin's thermo-cautery, the patient died from intraperito-

<sup>1</sup> Centralblatt für Gynäkologie, 1881, vol. v., p. 68.

<sup>2</sup> Centralb. f. Gyn., 1878, vol. ii., p. 635.

<sup>3</sup> R. P. Harris, Journ. Med. Sc., April, 1880, vol. lxxix., p. 349.

<sup>4</sup> Centralbl. f. Gynäk., 1878, vol. ii., p. 575.

<sup>5</sup> Ibid., 1879, vol. iii., p. 504.

neal hemorrhage. Litzmann<sup>1</sup> tightened a rubber tube, as temporary compressor, around the cervix, and applied ten interlaced sutures to the uterus before cutting it off, and there was still some blood pouring up from the interior of the cervical stump, wherefore he ligated it in two halves, beneath the first row of ligatures. Breisky<sup>2</sup> applied two copper wires, and inserted them in Cintrat's ligator; but one burst, and the other became loose, so that other wires had to be applied. Berruti Giuseppe, of Turin,<sup>3</sup> ligated the stump, in two halves, with silk, but it became necessary, besides, to apply a wire tightened with Koeberlé's *serre-noeud*. In Halbertsma's above-mentioned case, it was so difficult to arrest the hemorrhage that, besides the wire compressing the whole cervix, and the two embracing each one-half of the pedicle, it became necessary to put a fourth all around it. Veit<sup>4</sup> had used Esmarch's temporary compression, by a soft-rubber tube, and united the two halves of the cut surface with deep and superficial sutures according to Schroeder's method. When the constrictor was loosened, a stream of blood welled up from the left uterine artery between the sutures. This was controlled by passing a double ligature through the stump, one-half of which was tied at the left-hand margin of the stump, and the other at its top.

*Shock and Exhaustion.* Although these expressions ought to be used for different conditions, the first meaning a sudden depression produced on the nervous system, the other the slow undermining of the vital forces by protracted suffering or loss of albuminoid substance, through different kinds of discharges, such as bleeding, leucorrhœa, suppuration, albuminuria, etc., they are so often used promiscuously, that it is not possible to separate them from one another. One may also be so intimately connected with the other that it becomes impossible to draw the limit, and make out if death is due to one or to the other. The patient may be brought so near death by exhaustion that the shock produced by the operation is too much for

<sup>1</sup> Centralbl. f. Gynäk., 1879, vol. iii., p. 2.

<sup>2</sup> Ibid., 1879, vol. iii., p. 146.

<sup>3</sup> Ibid., 1879, vol. iii., p. 581.

<sup>4</sup> Journ. Med. Sc., Jan., 1881, vol. lxxxi., p. 302, from Zeitschr. f. Geburtsh. u. Gynäk., V. 2, 1880.

her, as in Dr. Thomas' first case, Dr. Skene's first case, and Dr. Hime's and Dr. Edis' cases. I would call all these fatalities, deaths from shock; the first three patients dying within a few hours, the last living only forty hours after the operation; but they were, all of them, exhausted by disease or suffering before they were operated on. Shock, then, has so far proved the only cause of death in gastro-elytrotomy. By operating earlier, or by refusing to operate on dying subjects, now that the feasibility of the operation has been sufficiently proved, this cause of death would be eliminated or restricted.

As to Porro-Müller operations, we find on Dr. Harris' list of fifty operations with twenty-nine deaths, four attributed to exhaustion and two to shock.

Everything else being equal, there can be no doubt that the danger of shock would be much greater in the Porro-Müller operations with their opening of the peritoneal cavity, pushing back protruding intestines, the constriction of a large amount of tissue rich in nerves, and the ablation of a large blood-filled organ, as the uterus at term. On the other hand, the danger of exhaustion from suppuration would be greater in gastro-elytrotomy with its two large wounds with bruised edges. But, so far, those who have lived long enough to reach the suppurative stage have been saved, and it is well known how much the loss sustained by the body in consequence of suppuration may be diminished by a free use of carbolic acid and other antiseptic precautions.

*Peritonitis* may occur in gastro-elytrotomy, and did so in pre-Thomasian times, and before the antiseptic dressing was known, in Baudelocque's second case (Monograph, pp. 20-21, 27-28). This danger is evidently infinitely smaller in this operation, which keeps outside of the peritoneum all the time, than in the two others. In fact, we find it is in them the chief cause of death. Harris has eight cases of simple peritonitis and five of septic peritonitis in fifty operations. He states<sup>2</sup> that drainage-tubes through Douglas' *cul-de-sac* and the abdominal wound have been employed sometimes to the number of three or four, but in almost every case at least one through the *cul-de-sac* and vagina. This may be very wise in order to drain the peritoneal cavity, but it

<sup>1</sup> Journ. Med. Sci., July, 1880, p. 134.

<sup>2</sup> Ibid., April, 1880, Vol. lxxix., p. 337.

necessitates a new wound in the peritoneum and the presence in it of foreign bodies which, at the same time they remove obnoxious fluids, are liable to be carriers of septic matter from without.

*Septicemia* and *Septic Peritonitis*, which are so much dreaded by the opponents to gastro-elytrotomy, have so far never occurred, and we have shown above that this operation is quite amenable to a good deal of antiseptic precautions. In the Porro-Müller operations, these conditions score a high figure as causes of death. Harris has five deaths from septic peritonitis and three from septicemia, together eight in fifty cases.

Besides these more common dangers and causes of death in the Porro-Müller operations, we find a certain number of rarer ones.

*Non-union of Pedicle.* In one of Chiara's cases,<sup>1</sup> the pedicle, in consequence of vomiting, was forcibly drawn into the abdomen, and a knuckle of bowel was forced out. This is said to have given rise to a severe shock to the system of the patient, from which she did not rally. In a case of Coggi's,<sup>2</sup> the pedicle, held in situ by Cintrat's *serre-nœud*, had likewise failed to form any adhesion with the abdominal wound, had been drawn into the abdominal cavity, and set up a peritonitis, of which the woman died. This accident would be avoided by the intraperitoneal method; but, as we presently shall see, there are still greater objections to that.

In a case of Peyretti, of Turin, the patient died of *tetanus*. This formidable disease occurs sometimes even in cases of parturition in which no kind of operations have been performed,<sup>3</sup> but commonly it is caused by some kind of injury. When, now, we remember that Dr. Parvin has collected no less than sixteen cases of tetanus after ovariectomy;<sup>4</sup> that J. R. Chadwick,<sup>5</sup> of Boston, lost a patient from this cause after amputation of the uterus for a fibroid tumor; that Spencer Wells<sup>6</sup> and Dr. B.

<sup>1</sup> Harris: Journ. Med. Sci., April, 1880, p. 343.

<sup>2</sup> Harris, l. c., p. 351.

<sup>3</sup> See Garrigues: Obstetrical Tetanus and Tetanoid Contractions. This JOURNAL, Oct., 1882, vol. xv., p. 769, seq.

<sup>4</sup> Parvin: Amer. Gyn. Trans., 1877, Vol. ii., p. 321.

<sup>5</sup> Ibid., p. 324.

<sup>6</sup> Ibid., p. 320.



Dawson,<sup>1</sup> of this city, have each had a similar case after perineorrhaphy, it does not seem unlikely that the pressure exercised on the nerves contained in the parts constricted by the ligatures may have some influence on the development of the dread disease, and then it would be more apt to occur in oöphoro-hysterectomy than in gastro-elytrotomy.

*Pulmonary edema* has caused the death of one patient after a Porro operation,<sup>2</sup> *hyperpyrexia* has proved fatal in two cases, and Dr. I. E. Taylor's patient succumbed to *heart-clot*, formed by an embolus detached from a thrombus in the leg.<sup>4</sup> All these accidents might as well happen after gastro-elytrotomy.

If the fetus is dead and the liquor amnii fetid, the danger of infection is very great in Porro's operation, less in Müller's, and least of all in gastro-elytrotomy. The supposed conditions were present in Dr. Gillette's case, and the history does not show any infection caused thereby.

The introduction of the antiseptic treatment has had, as a necessary corollary, the almost universal adoption of the *intra-peritoneal method* in dealing with the pedicle in ovariectomies. It is, therefore, no more than was to be anticipated that this method should have been extended to the treatment of the cervical stump left after the ablation of the uterus in the Porro-Müller operations. Certain of the dangers of these operations, especially those arising from the lack of union between the stump and the abdominal wound, would be entirely avoided, and it has appeared to some obstetric surgeons that the danger from septic infection would be considerably diminished. However, the great expectations with which the intraperitoneal method was surrounded have so far not been justified by experience. This method has been tried five times, and four of the patients have died. The first case was the above-mentioned one of Litzmann, of Kiel.<sup>5</sup> Although a very orthodox Listerism, including carbolic spray, was used, the patient died from septic peritonitis, the source of which the operator sees in the secretion from the cervix. The second case was the

<sup>1</sup> AMER. JOURN. OF OBSTET., 1876, Vol. ix., p. 85.

<sup>2</sup> Franzolini's case. Harris, Jour. Med. Sci., April, 1880, p. 348.

<sup>3</sup> Harris: Journ. Med. Sci., July, 1880, p. 134.

<sup>4</sup> I. E. Taylor: Gastro-hysterectomy. Am. Journ. Med. Sci., July, 1880, p. 123.

<sup>5</sup> Centralbl. f. Gynäk., 1879, vol. iii., p. 1.

third of Wasseige's, of Liege,<sup>1</sup> operated on March 18th, 1880. Here the stump was cut so as to form a V, and the two halves brought into contact and sewed together, so that no raw surface came into contact with the peritoneum. The patient died suddenly on the sixth day. No autopsy. Since death came on unexpectedly, it seems likely that it was due to embolism. The third case (April 8th, 1880) was the above-mentioned one of Dr. I. E. Taylor, who came very near a success, his patient living for twenty-six days, but who nevertheless lost her by an embolus detached from a thrombus in one of the legs. The fourth case was that of Veit, of Bonn. The treatment was the same as in Wasseige's case, and the patient died of peritonitis and pyemia. Thus we see that even the two cases in which only temporary ligature was applied, so that there was no part of the stump isolated from its natural source of blood-supply, and no raw surface left in the peritoneal cavity, which would seem to be the acme of perfection of antiseptic treatment, succumbed, the one to pyemia, the other to an unknown deleterious influence. The only case which has been successful is Veit's second,<sup>2</sup> which was treated in the same way as the first.

An advantage in oöphoro-hysterectomy is that the operation can be performed before the cervix is dilated. Thus the operator can choose his time, everything needed can be prepared at leisure, and the operation can be performed before the patient has lost any of her strength by ineffectual efforts at delivery through the natural passages. But all these favorable circumstances are lost if, as it happens in most cases, the patient does not come under observation before she has been for some time in labor pains, and we have seen that, even when present, this advantage does not secure a better result than a gastro-elytrotomy.

In other respects, this latter operation is less objectionable than its competitors.

It will be much easier to persuade a woman to submit to an operation which is not surrounded by the popular dread of

<sup>1</sup> Centralbl. f. Gynäk., vol. v., p. 163. Harris: Journ. Obst., vol. xiii., p. 888, 1880.

<sup>2</sup> Centralbl. f. Gynäk., 1880, vol. iv., p. 456.

<sup>3</sup> Ibid., 1881, No. 9, p. 193.

Cesarean section, by which no part of her body is taken away, and by which her abdomen is not opened.

Oöphoro-hysterectomy seems to be much more difficult of execution and to require a larger number of assistants. Dr. Elliott Richardson, who has performed the first successful Müller operation in this country, says that eight assistants are necessary.<sup>1</sup>

Finally, oöphoro-hysterectomy makes the woman sterile at once, while gastro-elytrotomy allows her to bear at least three children. Those who advocate the ablation of the uterus and the ovaries, find this sterilization of the patient not only justifiable, but commend it as one of the advantages of the operation. According to them, a woman who cannot give birth to a child ought not to have any. But how often do we find, even among poor people, the natural desire of offspring strongly developed? How often is a marriage unhappy because it is childless? How often is the married woman despised because she has no children? And who can tell of what he deprives humanity by producing artificial sterility?

In my monograph (p. 62) I have pointed out as *counter-indications* of gastro-elytrotomy: 1, the impossibility of repeating the operation on the same side; 2, the impaction of the head in the pelvis; 3, the presence of a large tumor in the vagina; 4, an obstruction in the womb itself; 5, atresia or coarctation of the vagina. To these counter-indication, Stadfeldt, of Copenhagen, has added, 6, the presence of a tumor starting from the anterior wall of the pelvis, and pushing the vagina back towards the sacrum. The same author believes<sup>2</sup> that the cicatrix left by gastro-elytrotomy on one side will render its repetition on the other side impossible. This view I cannot share. During pregnancy all tissues, even cicatricial, become usually so soft that they do not oppose any barrier to the passage of the child. I once saw a case, in consultation, in which there was extensive diphtheritic ulceration of the womb

<sup>1</sup> Journ. Med. Sc., Jan., 1881, p. 40.

<sup>2</sup> A. Stadfeldt: Fødselen ved Bøkkenets Svulster med særligt Hensyn til Anvendelsen af Laparo-hysterotomien, Laparo-elytrotomien, og Hysterectomien (Parturition in Cases of Pelvic Tumors, with Special Consideration of Laparo-hysterotomy, Laparo-elytrotomy, and Hysterectomy). Copenhagen, 1879, p. 71.

<sup>3</sup> Ibid., p. 70.



and the vagina. In consequence of the cicatrization, the vagina became much shortened and narrowed. The following year I delivered the patient of a large child, and did not find the least obstruction in the vagina, the walls being entirely soft and yielding.

In trying to establish the indications for the different operations of which we have spoken, the surroundings of the patient cannot be left out of consideration. Thus, if working in the country, and being called to a case in which Cesarean section or one of its substitutes were required, keeping in mind the many cases of successful Cesarean operations in country practice, I would not hesitate to perform this operation, as has been done, without assistance, and even without a bistoury, simply using a common razor.<sup>1</sup> In a hospital, I would, everything otherwise equal, prefer gastro-elytrotomy according to Thomas' method, if the cervix was dilated or dilatable, or if the patient's condition warranted delay. If it were necessary to operate before the dilatation of the cervix had begun, I would perform Müller's operation, which has given better results than Porro's.

The general condition of the patient may likewise indicate one operation in preference to others. Thus, with all my interest in gastro-elytrotomy, when a short time ago I had a patient presenting an absolute indication for Cesarean section or one of its substitutes, in whom the local condition was admirably fit for gastro-elytrotomy, although I had excellent assistance and all needed instruments at hand, I nevertheless performed Cesarean section, because the patient's condition was such that it could be foretold with certainty that her miserable system would not be able to sustain the loss caused by the indispensable suppuration, consequent on gastro-elytrotomy.

*Anatomy.* Our knowledge of gastro-elytrotomy has recently received a valuable addition by a paper read before the New York Obstetrical Society by Dr. Wm. M. Polk.<sup>2</sup> In my monograph (p. 56) I had stated that Baudelocque had operated

<sup>1</sup> Berthier (Aix-les-Bains). *Journal de Médecine*, Oct., 1878. *Centralbl. f. Gynäk.*, vol. ii., p. 640.

<sup>2</sup> This case will be published in detail.

<sup>3</sup> N. Y. Med. Journ., May, 1882, pp. 449-454.



in both his cases by cutting on the left side, that my experiments made it likely that, likewise by tearing, the results would be as good on the left side as on the right, but that this ought to be tried on the cadaver of a woman advanced in pregnancy. This Dr. Polk has done, and found the operation as feasible upon one side as upon the other. After the operation the rectum was carefully examined, and found in no way disturbed.

While Dr. Polk thus has corroborated my views on the feasibility of the operation on the left side, he has found me in error in a very important point. I have said (l. c., p. 73) that the vagina was to be incised below the ureter, and Dr. Polk has indeed found that he could extract the child through an opening made as suggested by me, but that, thereby, the ureter became stretched and slightly lacerated. In his second operation on the cadaver, he inserted a probe in the left ureter, made the operation as in fact it has always been performed on the living subject, and as I have described it (l. c., p. 75), by hugging the lower surface of the peritoneum and the side of the cervix, down to the vagina, which he incised about three-quarters of an inch below the cervico-vaginal junction, and parallel to the brim of the pelvis. *The ureter was found below the incision, well out of reach of danger.* During the extraction of the child, it was pressed downward and toward the pelvic wall, its displacement being trivial. After extraction it was found just below the rent, in its normal position, and intact. It was not only on account of my dissections made on cadavers of non-pregnant women, that I advised to incise the vagina *below* the ureter, but I was also led to this statement by a careful study of the history of the operation. Both Ritgen and Baudelocque made their incision below that organ, and as they both made autopsies of their cases, they could make sure of the fact. Ritgen uses (Monograph, p. 14) the expression, "the ureter adhering to the rough surface of the peritoneum." Baudelocque (ibidem, p. 18) says, that the operator thrusts the bistoury from without through the side-wall of the vagina, *beneath the ureter*, which is found one centimetre below the neck of the womb. In describing his first operation, he says (ibidem, p. 19): "I pressed the point of the bistoury against the external surface of the vagina, *one centi-*

*metre and a half beneath the ureter, about twenty-seven millimetres below the neck of the womb."* In none of these two cases the child was extracted through the vaginal wound, but in Baudelocque's last case, in which gastro-clytrotomy was fully performed, the woman living till the fifth day, he says, likewise: "I extended the incision with a probe-pointed bistoury from above downward, *in order not to injure the ureter.* At the autopsy there was found beginning peritonitis, but 'all other organs' were healthy." In this connection I would state that, in the puerperal case which I presently shall mention, separating the peritoneum, on one side, hurriedly from the iliac fossa, I found that the ureter had been loosened from all its connections, both with the peritoneum and with the connective tissue, extending somewhat like a bowstring between the posterior wall of the pelvis and the bladder. Thus, there is no doubt that the child can be extracted both below and above the ureter, but I agree with Dr. Polk that the latter method is safer. The cause of this is that the operation is performed in the anterior part of the pelvis, between the spine of the pubis and the anterior superior spine of the ilium, in front of the broad ligament. In this part of its course the ureter lies, even in the woman at term, rather deep below the brim of the pelvis, and it would become more displaced and stretched, by extracting the child under it, than by doing so above it. On the other hand, the bladder is more liable to injury in the high operation. By operating below the ureter, the tear in the vagina can be made parallel to the boundary line of the surface, in which the bladder is attached to the vagina (see Monograph, p. 67). By operating above the ureter, the tear has to stop short of the bladder, or a fistula will be produced. This point has to be investigated on a greater number of subjects. But Dr. Polk has extracted a child on the cadaver without tearing the bladder, and the accident, if it should occur, is of minor importance, the fistula having twice healed by itself (Thomas, Skene), and being easy to remedy by operation if required.

Another point of importance in Dr. Polk's paper is, that he has located the course of the ureters, with reference to bony or fixed points, and given two figures to illustrate what he has found. Unfortunately he has not deemed it necessary to ac-

company the first by any explanation, and the second, as well as some points in the text, do not seem quite correct. The opportunities of studying this question on the cadaver of women near the full term of pregnancy being rare, I have tried to verify Dr. Polk's description of the course of the ureters in the advanced stage of pregnancy, on the cadaver of a woman who had died some days after delivery. By directing an assistant to raise the uterus, which was still large, I have been able to convince myself of the entire correctness of some important points bearing on the subject, especially that *the broad ligaments, even in the non-contracted pelvis, are lifted so high up as to be entirely above the true pelvis.*

Dr. Polk gives the following distances of the ureter from the pelvic brim (in the recent state):<sup>1</sup> At the bifurcation, half an inch below [?],<sup>2</sup> at the extremities of the transverse diameter of the pelvis, about an inch, and at the spine of the pubis, two [?] inches below. As a whole, he says, the tubes are *situated on a higher plane than in the non-pregnant condition.*

In the case of the puerpera referred to above, I found the left ureter crossing the external iliac artery just below the bifurcation, which is abnormal, the crossing commonly taking place on this side in front of the common iliac and the internal iliac. From the point where the crossing began down to the brim of the pelvis the distance was one and five-sixteenth inches; from the end of the transverse diameter of the brim perpendicularly down to the ureter, the patient lying on her back, two inches; and from the spine of the pubis in a straight line to the junction of the ureter with the bladder, three inches.

Through the courtesy of Dr. Polk, I have had the advantage of examining together with him a specimen consisting of the pelvis with all internal organs taken from the body of a woman who toward the end of pregnancy died from hemorrhage due to placenta previa. This specimen being removed from the body was not fit for exact measuring of the distances between

<sup>1</sup> I think it would have been preferable if Dr. Polk had adhered to the path indicated by himself, and measured from the *linea terminalis*.

<sup>2</sup> The bifurcation being situated at the *upper* end of the ilio-sacral symphysis, the ureter in this locality is *above* the brim of the pelvis, *i.e.*, the *linea terminalis*, but it is about half an inch below the *crista ossis ilium* or the brim of the *large* pelvis.



the ureter and different bony points; especially the distance at the end of the transverse diameter could not be made out in a satisfactory way, but many other things were seen very plainly. The left ureter, which was the one we dissected, passed in this case, as in the above-mentioned of the puerpera, in front of the external iliac artery, just below the bifurcation, which is the normal course on the right side. Furthermore, the broad ligaments were entirely lifted up from the true pelvis, so that their base, that is to say, the connective tissue with fat and vessels, which in the unpregnant state lies deep down in the true pelvis on either side of the uterine cervix, reached up to the level of the brim. The middle part of the ureter, that which in the unpregnant state dips down to the neighborhood of the ischial spine, had followed the broad ligaments in their ascension. From the point where the ureter crossed the external iliac it went forward, downward and outward, lying immediately under the peritoneum on the wall of the large pelvis. In the neighborhood of the end of the transverse diameter of the pelvis, or rather a little behind it, the ureter dipped down into the true pelvis and began to go inward, forward and downward, forming a curve till it finally entered the bladder. On this way it passes under the broad ligament and in front of this organ it lies again immediately under the peritoneum. We found its anterior end lying so deep that the distance from the point where it reached the bladder to the anterior surface of the spine of the pubis<sup>1</sup> measured two and three-eighths inches, and from the point where the ureter debauches in the interior of the bladder to the posterior wall of the pubis behind the spine, fully three inches. The uterine artery was seen to form a loop in front of the ureter before it turned up to the edge of the uterus.<sup>2</sup>

The chief points to be borne in mind in order to understand how the operation of gastro-elytrotomy can be possible and sometimes even easy are that the broad ligaments are lifted up above the brim of the pelvis, that their lower part is brought backwards towards the posterior wall of the pelvis, and that the vagina becomes so very distensible during pregnancy. The first circumstance makes it easy to hug the peritoneum until the

<sup>1</sup> Tuberculum pubis of the German.

<sup>2</sup> The calibre of this artery was comparatively small. It equalled that of the ureter, while the internal spermatic was much thicker.



cervix is reached, the second furnishes room for the extraction of the child, and the third makes it possible to lift the vaginal roof up into the wound, so as to make it accessible to the knife.

Dr. Polk found the point where the ureter strikes the base of the bladder three-quarters of an inch below the cervix. I found it just on a level with the os (l. c., p. 69). Perhaps the bladder in his case has been more or less full, while in my case the bladder was empty. I suppose that the bladder in his case was distended, because Luschka<sup>1</sup> says that, as a rule, the ureters extend down to a line between the upper and middle thirds of the anterior wall of the vagina, and shows this in a figure, in the explanation of which he states expressly that the bladder was much distended.

Pawlick,<sup>2</sup> of Vienna, pretends that the limits of the *trigonum vesicale Lieutaudii* are marked by furrows on the vaginal wall. This would not only facilitate the catheterization of the ureters, but allow to locate their course, with great precision. But I must say that I have not been able, even in unimpregnated women, to convince myself of the presence of the furrows described by Pawlick, and during pregnancy the vagina becomes so hypertrophied, softened, and folded that then at all events they disappear, as I have ascertained by a special examination of ten women near the full term. As a matter of fact, the ureter has never been injured in gastro-elytrotomy, and the dissections of Dr. Polk have shown that they do not lie in the field of operation, but are situated below and behind. Thus regard for this important organ, as little as fear of hemorrhage or of septicemia need restrain obstetric surgeons from trying an operation which so far has given as good results as Müller's, better than Porro's, and which has been unanimously praised by all who have tried it on the living subject.

### Conclusions.

1. Dr. Thomas' method of gastro-elytrotomy has been performed eight times. One-half of the mothers recovered. All the children survived except two who had died long before the operation was done.

<sup>1</sup> Topographie der Harnleiter des Weibes, in Archiv für Gynäkologie 1872, vol. iii., p. 378.

<sup>2</sup> Centralbl. f. Gynäk., Supplement to No. 21, p. 13.

2. The operation may be performed with many antiseptic precautions.

3. Porro's operation has given less good results and Müller's no better than Thomas'.

4. The dangers, especially as regards hemorrhage, peritonitis and septicemia are greater in the Porro-Müller's operations.

5. The intra-peritoneal treatment of the stump in Porro's operation, carried out in five cases, has four times resulted in death.

6. One advantage in the Porro-Müller operations is the possibility of operating before the commencement of labor.

7. Gastro-elytrotomy is less repulsive to the mind of the patient, less difficult of execution, and can be performed with less assistance.

8. It does not sterilize the woman.

9. In country practice, the old-fashioned Cesarean operation will in most cases be preferable to all its substitutes.

10. Thomas' operation can be performed on the left side as well as on the right.

11. The ureter stays *below* the incision.

12. All those who have performed gastro-elytrotomy on the living subject or on the cadaver recommend it.

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## GENITO-REFLEX NEUROSIS IN THE FEMALE.

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BY

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IN no department of medicine is there greater difficulty to be encountered by the inquirer after truth than is presented in the class of nervous disorders. More especially is this so with regard to that branch of the subject which has been denominated reflex neuroses. Much as has been written on this subject, problems of deep interest to the profession and of the highest importance to the public remain as yet unsolved, and much is to be done in the way of careful observation, and the elimination of useless ideas and unmeaning names.

If the writer shall succeed in contributing anything which will aid in better modes of observation and investigation, and will lead to a more correct etiology and safer methods of practice, his time and labor will not have been wasted. It was his fortune (good or bad) on a former occasion, unexpectedly and without premeditation, to express views on one of the subjects now embraced under the above title, which seemed to surprise, if not startle, members of the profession who then heard him. Subsequent reflection, reading, and observation have induced him to enlarge and extend the views then expressed, in a manner which may not prove less startling. The topics proposed to be discussed under the caption of this paper are eclampsia, hystero-epilepsy, and hysteria in its various forms, as affecting the organs of respiration and digestion; and tracing many of them to one common cause, to wit: stenosis.

The first topic to be discussed is eclampsia. It is ordinarily divided into *E. gravidarum* and *E. infantum*. First of puerperal convulsions, because of their greater importance and danger. A wide difference of opinion exists among writers as to the cause of puerperal convulsions, in consequence of which there is an equally great difference with regard to its proper treatment. These differences are attributable in a great degree to a fanciful nosology and an erroneous etiology, both of which it is here proposed to discard and class the disease as a *genito-reflex neurosis*. Its origin or cause has advocates on various theories: as hyperemia, hydremia, anemia, uremia, toxemia, nervous irritability, and last, though not least, albuminuria.

Most of the causes assigned are inventions of comparatively modern days, and have given rise to theories based on pathological changes falling within the observation of their propagators; or on prominent symptoms manifested as the result of such changes. Older writers have attributed these convulsions to undigested food in the stomach or irritation existing in some other part of the alimentary tube; general irritability of constitution; a delicate and luxurious mode of living; to depressing passions; to over-distention of the uterus and of the bladder, and to the death of the child. Ramsbotham concludes this list by giving it as his opinion that it "originates more frequently in some deranged state of the uterus itself, probably in its nervous system, and *consists in some irritation propagated*

from that organ to the brain." The foot-note appended to this opinion by Ramsbotham, and several cases given by Smellie<sup>1</sup> might, if they had been studied with moderate care, have saved much of the labor and ingenuity displayed in sustaining the more modern inventions of hydremia, albuminuria, etc., which are generally only symptoms or "accidental coincidences" of changes, the mechanical results of the pregnant condition.

Much of the mystery surrounding this subject, many of the contradictory causes and pathological changes adduced in support of these theories might have been avoided, had not the writers been misled by a common error of mistaking a prominent, though not constant, symptom for a disease: had they carefully weighed the force of what they themselves had to admit, and attended to the physiological mechanics of gestation and parturition, instead of being governed by the trammels of a faulty and fanciful nosology and an undue reverence for the teachings of their illustrious predecessors.

As an illustration of this assertion, take Spiegelberg as a representative of a school in which the leading idea is uremia. He says<sup>2</sup>: "In order not to be misunderstood, I recapitulate as follows: *True eclampsia depends upon uremic poisoning in consequence of deficient renal secretion.*" A decided opinion expressed in unequivocal terms, but he feels the necessity of accounting for the existence of this condition and of meeting causes assigned by others and which he may have personally encountered. This he does in the following way: "The latter is caused either by chronic nephritis, which is increased to a dangerous extent by the influence of gestation, and especially of labor." It is even probable that "complete uremia may result quite suddenly from spasm of the blood-vessels, and that the vaso-motor spasm, as also the same condition which probably exists in the brain, can be considered as a *reflex irritation from the uterine nerves*;" a notable admission which he did not emphasize. "If a reflex irritation of the vaso-motor nerves of the kidneys which communicate with the sympathetic, and eventually of those of the brain by the uterus, be accepted, the difficulty of reconciling the different causal relations of contractions of the uterus and convulsions is overcome." "*Cases*

<sup>1</sup> Sydenham Society publication by McClintock.

<sup>2</sup> Amer. Gynecol. Trans., Vol. ii., p. 167.



*of eclampsia without albuminuria form a separate class. They are acute epileptic attacks.* The epileptogenic zone lies in the domain of the sciatic nerve."<sup>1</sup> "*So near and yet so far.*" Could he have escaped the trammels of preconceived notions and avoided the error of mistaking, as too many others have done, a symptom for a disease, or effect for cause, he would probably have given us the true etiological cause; what he subsequently was forced to use as the process by which uremia might be caused. As to his fanciful division of puerperal convulsions into acute and albuminous, it is sufficient to say that, for practical purposes, it is worse than useless; all attacks of eclampsia gravidarum are acute; epileptiform, apoplectiform, or any other *form*. That "the epileptogenic zone lies in the domain of the sciatic nerve" may without sacrilege be questioned; though it frequently, from pressure on it, gives rise to "cramps" or spasm of the muscles of the legs.

Nothnagel<sup>2</sup> is a writer of a different school, and clears up much of the mystery beclouding this subject when he says: "We propose that *the designation of eclampsia should be made use of for those cases of epileptiform spasms which, independently of positive organic diseases, present themselves as an independent acute malady, and in which, so far as our present knowledge allows us to judge, the same processes arise, generally in the way of reflex excitement, and the same mechanism in the establishment of the paroxysms comes into play, as in the epileptic seizure itself.*" This definition presents a clearer view as to what is eclampsia and of its pathology, which would have been more clear if he had written it *always*, instead of *generally*, as a *reflex excitement*.

Trousseau and Carl Braun locate this disease in the kidneys; the former in the abnormal discharge of their functions in the excretion of albumen,<sup>3</sup> the latter in organic change producing an albuminous condition of the urine in consequence of which eclampsia is developed. Trousseau in his twelfth lecture says: "I shall not review all the exciting causes enumerated in text-books, but there is one to which I am anxious to call your attention, although it was absent in the case of my patient, I

<sup>1</sup> American Gynecol. Trans., Vol. ii.

<sup>2</sup> Ziemssen's Cycloped., Vol. xiv., p. 302.

<sup>3</sup> Clinical Lectures, Vol. i.

mean *albuminuria*." Acknowledging his inability to "make out the exciting cause of the seizures" in the single case on which the lecture is based, and says, "the only etiological condition to which I could ascribe them was that the patient was a primipara," which is the most common condition in which these convulsions occur. Bear in mind that "she had complained of nothing peculiar during her pregnancy, nor does there appear to have been anything *peculiar* during the delivery except that a *full dose of ergot of rye* was administered *after* the delivery," and that the "convulsions came on two hours afterwards."

Braun, of Vienna, also is an advocate of the albuminous theory, but in a recent lecture, delivered at the obstetric clinic of the Vienna General Hospital, he seems to have discovered the insufficiency of that theory, and alleges that when albumen is absent, the subjects generally have "amyloid degeneration of the kidneys."<sup>1</sup> At the autopsy, "however, amyloid degeneration of the kidneys and muscular coat of the heart was always demonstrable." In this lecture several important dogmas are announced very emphatically, but whether they emanated from the learned professor or the reporter is not so clear. The report says: "In eclamptic cadavers, anemia of the brain, lungs, and cerebral edema, *particularly remarkable alterations* in the *kidneys* are almost without exception found." Another important dogma is announced as follows: "*Venesection* also is not permitted in Prof. Braun's clinic." "He does not consider cerebral edema or hydremia to be indications for blood-letting; moreover, if the patient does not die from the direct effect of bleeding, this procedure has had nothing to do with her recovery." An equally dogmatic professor wrote, "great men propagate great errors," exhibiting in these few words more sound fact and philosophy than did the Vienna professor in his entire reported lecture.

My dealings and observations in cases of puerperal convulsions have not been very limited, except in the *post-mortem* line. In upwards of thirty cases there were but two deaths, both in charge of other gentlemen; one was bled, but after, in my judgment, sanguineous effusion had taken place; the other was not bled: the bleeding, however, assisted in relaxing a rigid

<sup>1</sup> Medical News, Philadelphia, June 17th, 1882.

os, and the child was delivered before death. In all the cases under my charge, free bleeding was promptly used and all recovered, so that it has not been my fortune to have opportunities for post-mortems, and consequently I have to rely on others for the information to be derived therefrom. In Prof. Braun's case, above referred to, we are told: "At the autopsy the usual lesions of eclampsia were found—intense edema of the brain and lungs, fatty metamorphosis of the kidneys." But more remarkable changes are recorded in this case. "*The abdominal aorta divided itself into its two terminal branches much higher than usual, and in their course over the common iliac arteries both ureters were 'kinked' to the occlusion of their lumen.*" No sooner had the labor begun than the "patient was suddenly seized with eclampsia," and of course a "chemical examination of the urine" was made, and "demonstrated the presence of albumen in a high degree." Was the "kinking" of the ureters and the *occlusion* of their lumen a sudden development *caused by* "edema of the brain and lungs;" of the "fatty metamorphosis of the kidney;" by the "albumen in a high degree," or I might ask, if the proposition were not too absurd, by the "chemical examination"?

That symptoms are not unfrequently mistaken for a disease, as also for the cause of disease, is a fact abundantly proven by the history of medicine and the observation of its practitioners. That highly albuminous urine has been found in cases of pregnancy is not to be denied; and that eclampsia has occurred in such cases is not to be doubted; neither is it to be denied that such cases, accompanied by dropsical limbs, puffy faces, and dyspnea have occurred without the slightest manifestation of eclamptic convulsions, and that these symptoms disappear soon after delivery, even without special treatment. These same symptoms occur in males and non-pregnant females without convulsive developments. It follows, then, that albuminuria and eclampsia are not synonymous things, and it is more than probable that albuminous urine is not the cause of eclampsia, although it does sometimes accompany that disease as a *sign of morbid conditions* which can produce these convulsions. In other words, albuminous urine is only a symptom of functional derangement or organic change in the kidneys or stomach, and is not *per se* a disease or the cause of a disease.



Another class of eclamptic pathologists is fairly represented by a recent writer in the *AMERICAN JOURNAL OF OBSTETRICS*<sup>1</sup> who professes to have little or no faith or confidence in our knowledge of the etiology of eclampsia, which need not be wondered at, considering what has been written in this regard. He has had the boldness "to grapple with preconceived notions, to trample upon cherished theories," and promulgate principles which, if not altogether new, have a decided character, and from which can be obtained more correct ideas of the nature of this fearful disease. He says: "A woman who bears her pregnancy lightly never has convulsions." He held in his hands the key which unlocks the door to the mysteries surrounding this disease, and if he had not been hampered by "old and strong convictions built on the reason of the case," as he saw it, "and buttressed round by many facts," he could have arrived at more enlarged views of its etiology, its pathology, and treatment. The plan of treatment he advocates indicates his belief in its neurotic origin, and if the practitioner always had the foreknowledge of what might occur, his plan of treatment would be a very effectual preventive in most cases, but unfortunately this knowledge is most generally acquired after the seizure has been developed.

Playfair, in his treatise on the puerperal state, after referring to the researches of Lever, Braun, Frerichs, and many others, says: "While the urinary origin of eclampsia has been pretty generally accepted, more recent observations have tended to throw doubt on its essential dependence on this cause; so that it can hardly be said that we are yet in a position to explain its true pathology with certainty." After reviewing the theories of the more prominent writers on this subject, he says: "The key to the liability of the puerperal woman to convulsive attacks is no doubt to be found in the peculiar excitable condition of the nervous system in pregnancy—a fact which was clearly pointed out by the late Dr. Tyler Smith and by many other writers. Admitting this, we require some cause to set the predisposed nervous system into morbid action; and this we may have either in a toxemic, or in an extremely watery condition of the blood associated with *albuminuria*; or along with these, or sometimes independently of them, in some excite-

<sup>1</sup> Clarke, op. cit., July, 1880.



ment, such as strong emotional disturbance." Another example of a great man, having in his hand the key which unlocks the door inclosing the mystery of eclampsia; hampered "by old and strong convictions built" on current notions "and buttressed around" by the dicta of his predecessors and contemporaries, succumbing to a symptomatology instead of revealing etiology. The theory of the albuminous origin of this disease has had so many and such prominent advocates that none dared to deny it emphatically, except the one recent writer already quoted from the AMERICAN JOURNAL OF OBSTETRICS.

In the hope of removing from the minds of at least a portion of the profession the obscurity produced by this albuminous cloud and leading them to more clear and true views on this important subject, permit me now to say that the presence of *albumen in the urine is not eclampsia, does not produce it, is not the cause thereof, nor even is it a diagnostic symptom that it will occur.* This may, after all that has been written on this subject, appear to be not merely a bold, but an impudent assertion to emanate from an obscure provincial, nor do I propose to reason on it until after reference to the dicta of another in reference to this subject. I acknowledge no master in medicine except unequivocal truth, and will swear by no other.

"In studying albuminuria, it is well to bear in mind that the presence of albumen in the blood is a normal condition, while its existence in the urine is always abnormal. When I say the existence of albumen in the urine is abnormal, I mean of a kind and in a quantity sufficient to be detectable by heat and nitric acid. There is always albumen in healthy urine."<sup>1</sup> Albumen is an element which enters largely into the composition of the human tissues, and it is therefore indispensable that it should exist in the blood, and cannot be harmful until after it shall have subserved the purposes for which it was intended. Its presence in the urine in an unchanged state and abnormal quantity, so as to be detectable by the action of heat and nitric acid, indicate either functional or organic lesion, and what or where that lesion may be it is the duty of the physician to ascertain.

"As regards puerperal convulsions in cases of albuminuria, they are far more frequently the result of diseased kidney than

<sup>1</sup> Harley: On the Urine and its Derangements.

of the simple albuminuria of pregnancy." In this he is sustained by the more recent teaching of Braun, and the post-mortem in his case before referred to. Again, he says: "All I desire is to utter a strong protest against the oft-repeated statement that puerperal convulsions are always the result of the albuminuria of pregnancy, while in reality they are much more frequently the concomitants of true kidney disease."

Enough has been said to justify me in announcing my opinion, and to do so decidedly, as to the etiology, pathology, and, if you please, nosology of eclampsia, to wit: *a reflex neurosis, always and under all circumstances*. In proof of the correctness of this definition, I refer to the writings of Nothnagel, Spiegelberg, Playfair, Harley and others, and the cases of Trousseau and Braun, all of which, to my mind, clearly point to it as a reflex nervous disease. But merely defining it thus is not sufficient for practical purposes, or lead us to rational and certain modes of treatment. Reflex nervous acts do not manifest themselves without a cause. According to my observation, eclampsia does not always depend upon, nor is it developed by a single or the same cause; but the ordinary or most common cause is stenosis or stegnosis. I have seen cases in which pressure of the fetal head on the pelvic plexuses; in others, of its passing through rigid vulva, toxemia, septicemia, and *ergot*, appeared as the exciting causes. Albuminous urine is a symptom in lesions which may induce the eclamptic attack; but, *per se*, it has no more to do, as the originating factor of these attacks, than it has to do with originating scarlet fever.

The idea I wish to convey by the term stegnosis, in this connection, is a constriction of nervous filaments resulting from congestion, or inflammation causing plastic deposits, fatty degeneration or cicatricès, which are capable of interfering with their physiological action.

It is a fact, established by general observation, that by far the largest majority of eclamptic seizures occur in primiparous cases, which is a fact not without significance. The process of dilatation, in primiparous cases, is frequently slow and painful, as also is the expulsion of the fetus; irritable and fretful temper or great mental depression are developed, and these favor

Harley on the Urine.

the occurrence of the convulsions in cases of rigid cervix or os, by reflex nervous irritation.

That in such cases albumen and other abnormalities should be found in the urine, or even histological changes in the substance of the kidney, is in accordance with physiological laws. The development of the uterus and fetus necessarily encroach on all the other abdominal organs, including the renal and portal circulation; and, if the natural expansion of the abdominal walls is hindered or interfered with, the obstructions thus created are very likely to establish pathological conditions. Among the most frequent causes producing such results may be named fashionable compression, the indulgence of a naturally excitable disposition, aggravated by the activities of the pregnant condition, producing muscular rigidity, and thus offering additional, and too often dangerous, obstruction to an otherwise natural function. If albumen, under these circumstances, be present in the urine, as might rationally be expected, it is so not as a factor, but as a sign of a stegnotic condition which, by reflex irritation, is made apparent by the occurrence of a convulsive seizure. The strongest advocates of the albuminous theory indirectly acknowledge the correctness of the foregoing conclusion, in recommending and urging speedy delivery as the best means of terminating the convulsions. This it can do only by relieving the stenosed condition of the kidney; removing the reflex nervous action, and thus preventing the further elimination of albumen from the blood. This naturally gives rise to the question of treatment and, as stenosis will be advocated as the most common factor in other reflexes to be discussed, I will now proceed to that subject.

Two things are prominently indicated: whether we attribute eclampsia gravidarum to albuminuria, hyperemia, hydremia, toxemia, nervous irritability, stenosis, or whatever else—if the seizure precedes delivery—to wit: to prevent threatened danger, and promote delivery—speedy delivery. There is not, and cannot be a doubt that there is no safety for the patient until delivery is an accomplished fact, and that danger is to the brain. How is that danger to be prevented and the delivery promoted? The means on which my chief reliance is placed has already been indicated; it is that old-fashioned, much abused, and much misused remedy—the lancet. I have



no love for venesection; although, fifty years since, it was almost my daily habit, but in 1832, when the cholera made its appearance in this country, "a change came over the spirit of the dream," and the lancet disappeared from my pocket. I have not used it since, except in apoplectic and eclamptic cases; the recollection of former days, when it was the Alpha in everything, has engendered in me an antipathy to the lancet which has probably led me to the opposite extreme, and which nothing has been able to overcome except the fearful snort of these diseases. Venesection is not to be regarded as *the curative* agent, for there may occur cases in which it would be improper and unsafe.

I have advocated stegnosis as a most common cause of eclamptic seizures, especially if it be accompanied by a convulsive predisposition. I have bled in all cases under my charge after an eclamptic convulsion had been developed, and the patients were all safely delivered. When you find a rigid unyielding os, the face becoming flushed and livid, the carotids swollen and beating strongly during the fit, the lancet should be used promptly and freely; first, to prevent injury to the brain, and secondly, to relax the rigid os. To more effectually accomplish these purposes it is advisable to sit the patient in an erect position, open the vein freely so as to draw the blood in a large stream, until syncope is about to supervene. It will then be found that the os will readily dilate, the membranes can be ruptured and the child be speedily delivered. All these things, except the safety of the brain, may be accomplished by large doses of opium, which I prefer when the symptoms do not indicate danger to the brain.

Smellie and some other writers were advocates for venesection to a limited extent of ounces, and to be repeated a second time or oftener. If one bleeding be performed to the extent and in the manner above indicated, and speedy delivery be accomplished, there will be no need for a second venesection.

The convulsions, sometimes, do not occur until the fetal head is fully and fairly engaged in the middle strait of the pelvis, and at times in passing through the os externum. If the head has descended, carrying before it an undilated os, the lancet will prove a relaxant as well as a protection to an overloaded brain; if it does not sufficiently relax the os, chloroform



can then be used with safety and certainty. If the os be dilated and the convulsions occur, as they sometimes do, from the pressure of the head on the pelvic plexuses or passing through the perineal outlet, the reflected irritation from pressure on the plexus in one case, or the peripheral nerves in the other, they can be promptly relieved by chloroform inhalation.

When albumen is largely present in the urine of eclamptic patients, it exists in consequence of changes in the structure of the kidney, constituting a stenosis, and the irritation set up by it is reflected from its peripheral nerves to the brain, and if an epileptoid or convulsive predisposition exists, eclampsia will be developed, not because of the existence of albumen, but because of structural or nephritic change.<sup>1</sup>

Harley thinks that in such cases "a return to the lancet is highly desirable." No doubt of it, because it is the best and most speedy way of relieving the congestion of both kidney and brain. Whether the eclampsia occur in a *hyperemic* or *hydremic* condition; if the face of the patient becomes flushed or swollen, with strong pulsation of the carotids during the fit, the lancet is an advisable resort as a means of prevention. So far as the functions of the brain are concerned, whether the effusion endangering it be blood or serum, makes very little practical difference. It is probably more important to lessen the *vis a tergo* in the hydremic condition, as that is more favorable to edema, which the advocates of albuminuria always find in their *autopsies* both in the brain and lungs.

My object has been to impress on the professional mind the idea, which is here repeated, that eclampsia is always a *reflex neurosis*; that ante-partum, its most common cause is stenosis, which may be located in the cervix uteri, in the kidneys, in the vulva, or it may be in the body of the uterus itself. The lecture of Prof. Braun, already referred to, is particularly instructive on this point, although the lesion he considers the one of "great importance" will probably not be found more than once in a thousand eclamptic post-mortems, and amounts to nothing as regards the etiology of eclampsia unless it be taken as a fact in favor of stenosis, as the ureters were "kinked to the occlusion of their lumen."

<sup>1</sup> Harley on the Urine and its Changes. Braun in Medical News, June 17th, 1882.

I have cited pressure of the fetal head on the pelvic plexuses and *ergotism* as causes; and, recently, pressure on the sciatic nerves has been supposed to give rise to eclampsia. I have seen it frequently produce "cramps" in the legs, but never eclamptic fits, though it may possibly have that power.

The proposition that ergot is, or can be, a cause of eclampsia may be new and startling, but it is by no means inexplicable if we consider its action and the conditions attending thereon. Its convulsive tendency in toxic doses; its power of producing strong contraction of the uterine fibres, not lessened when aided by the excited and irritable condition of the nervous system in painful and protracted labors; and in patients having a convulsive tendency, the stenotic constriction resulting from contraction of the uterine muscular fibres, it cannot but be a rational expectation that it will give rise to eclamptic convulsions, if we acknowledge the existence of such a thing as reflex nervous acts. In confirmation of the correctness of this proposition take the case of Trousseau, and add to it a similar case occurring under my care. Trousseau could not account for the occurrence unless it was in consequence of the "full dose of ergot of rye" administered after the delivery of the child.

In my own case, also a primipara, violent and frequent convulsions had occurred before delivery, the patient had been bled, but less freely than I desired; a dead fetus, in a state of partial decomposition, had been tolerably promptly delivered, the convulsions had apparently ceased, as also had uterine contractions; prompted by the fear of hemorrhage, probably by impatience of the long delay of the labor, several doses of *secale* were administered to hasten the expulsion of the placenta. Tonic contraction of the uterus ensued, and the convulsions recurred; the hand was introduced with great difficulty, the placenta removed, and the convulsions quieted after the administration of several liberal doses of morphia, and the patient made a good recovery. She subsequently became the mother of several living children, and there were no subsequent convulsive manifestations.

I have had several other cases occurring, not in primiparæ, and in which there had not previously been any eclamptic symptoms in which I could discover no other etiological condition save a semi-putrid fetus. These cases I designate as being of toxemic origin. Another case, one among my later experiences, I attribute to septicemia.

The patient was the mother of a half-dozen children, never had any convulsions in any of her previous labors. In this instance the labor was an ordinarily easy and speedy one, and the convulsions did not occur until three days after the delivery, up to which time her progress might be considered normal; but that morning, on entering her room, my olfactories were assailed by a stinging, unpleasant odor, developed by a hot stove and the want of proper sanitary arrangements which were at once enforced. About an hour after my visit, a message was sent that she had a fit; on my arrival I found another physician present, and the patient in a state of stupor and unable to swallow. In a very short time she had a second convulsion, the carotids pulsed strongly, the face became livid; my prompt remark was, Bleed her, Doctor. She was bled until signs of returning consciousness were manifested, when a teaspoonful of compound tincture of chloroform was administered, the convulsions did not recur, and the patient made a good recovery.

In support of my theory of *stenosis* as a frequent cause of eclampsia, take an infantile case.

Some two years since, June, 1880, my services were called for a third time by G. S., a boy of two and a half years, with eclampsia, to which he had been frequently subjected, and the usual remedies of hot bath and chloroform were administered. As these three attacks had manifested themselves at intervals of about two months, my investigation into the history of the case elicited from the mother the declaration that she could always foretell the coming on of an attack, because, for two or three days preceding one of them, he became restless, and was talkative and excitable. There being no evidence of other functional disturbance or organic change, I requested the mother to undo his diaper, when phimotic stenosis was revealed, with a considerable accumulation of smegma beneath the constricted prepuce. My suggestion was circumcision, which was performed next day, and there has been no return of the usual paroxysms to the present time. The condition found, the remedy applied, and the result obtained are, to my mind, conclusive evidence that the eclampsia was a reflex nervous manifestation, and that it originated in consequence of the stenosed condition of the prepuce.<sup>1</sup>

At a meeting of the American Medical Association in Washington, Professor S. D. Gross announced an undescribed

<sup>1</sup> September 25th, 1882, I was hastily summoned to visit G. S., the case of infantile eclampsia herein related; his foot had been run over by the wheel of a railroad car. I found him damaged by the loss of the little toe and half of the one adjoining, with considerable contusion of the adjoining portion of the plantar and dorsal surfaces. There has been up to this time (October 8th) not the slightest indication of any convulsive tendency, and the wounded parts are granulating nicely. What deductions can be made legitimately?



form of facial neuralgia supervening after the extraction of a tooth, and which he attributed to the contraction of the bone around a nerve filament, and the relief of the neuralgia by removal of the bony structure which inclosed the nerve. At the same meeting, Professor Sayre described a paralytic condition of the lower limbs, cured by the removal of a constricted prepuce, both conditions of stenosis producing nervous reflex irritation. To these, I will add one other case, illustrating another condition produced by reflex nervous irritation from stenosis.

In April, 1881, coming out of the house of a patient, I found a brother practitioner waiting, who asked me whether it was usual for a fifteen-months-old child to have acute rheumatism. My reply was, Not usual, but not impossible. He then requested me to see with him a case in the adjoining house which had mystified him, stating that the little fellow's wrists and ankles had been very painful and much swollen, which condition was not disposed to yield to remedies. On entering the house, the child was found sitting in his mother's lap, the joints were swollen, but no redness, the hands and feet both "dropped." In view of the history given and the appearance of the child, I said to the mother, Undo his diaper, please, which seemed to surprise her considerably; but, on repeating my request, she complied. After viewing the condition, I turned to the doctor, and said, "You had better make a Jew of him." By his request, the operation was performed the next day, and two days after I saw him again; the swelling and "drop" had entirely disappeared without medicine, but the operator had not gained favor with the patient.

Cases like those referred to, and others to be given in different connections, have led me to believe that stenosis is a much more important and common factor in the production of nervous reflexes than it has been credited with, and that these reflexes frequently give rise to appearances which have deceived many practitioners in regard to nosology, etiology, and therapeutics. That such has been the case will be more fully demonstrated in several of the cases to be related in different subjects under the name of Hystero-epilepsy and of other hysteroidal affections.

(To be continued.)



## A TAMPON CARRIER AND NEW VAGINAL SPECULUM.

BY

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Washington, D. C.

SINCE the time Dr. J. Marion Sims first made use of vaginal tampons, charged with glycerin and other medicated fluids, probably no plan of treatment has been so successful for certain conditions, and so much favored by gynecologists, although patients frequently and strenuously object to it.

To those who are inmates of special hospitals, or whose circumstances permit an unlimited number of visits from their physicians, tamponing is seldom troublesome or objectionable, but to females of limited means, and to those who cannot or will not enter a hospital, much difficulty is found in self-introduction, and often the treatment has to be abandoned.

The writer has found in his practice much inconvenience and trouble in this regard, and to obviate it devised the hard rubber carrier shown in the woodcut, which explains the appearance of the instrument much better than a verbal description.



FIG. 1.

The instrument is shaped somewhat like Fergusson's well-known tubular speculum, but flares at one end and is curved, the curve being so adjusted that, after vaginal introduction, the patient being on her back, the opening is on a level with the plane of the abdomen. The material is black, hard rubber, and is smooth and well polished. Within the cylinder is a handled obturator closing the upper end, which has attached to it by means of a vulcanized rubber rod an oval plug which fits the

smaller and lower end; this rounds off the instrument and facilitates easy ingress. To use the carrier, the blunt end is lubricated and gently inserted into the vagina with a rotatory motion, the plug withdrawn, the medicated tampon placed in the open upper end, the plug replaced in the cylinder, forcing into the vagina in this way the wad of cotton. The withdrawal of the instrument terminates the operation. By this method none of the medicated fluid is lost as is always the case when a patient passes in a tampon herself in the old-fashioned way. There is a gain in cleanliness and a gain in saved material. It may also be used for poulticing the vagina or cervix, a mode of treatment gaining ground with some practitioners. These carriers can be made of any size, although I think but three would be needed in ordinary cases.

The instrument shown in Fig. 2 can hardly be claimed as entirely original, as it embodies to a certain extent the principles of other well-known specula.

There can be no doubt that, for ordinary vaginal examinations, Sims' speculum fulfils every indication, but if the physician using it has no assistant and needs to employ other instruments in addition to it and his depressor, he is at a disadvantage, for with two hands only it is impossible to hold the speculum in position, separate the buttocks, depress the anterior wall and operate. Few practitioners are able to keep a trained assistant constantly employed, and patients frequently refuse to have witnesses to their uterine troubles in addition to their doctor. It may be said that we have in the many bivalve specula before the profession all that is needed for practical purposes; this is true in many cases, but so far as my personal observation goes, many, if not most women object to the position necessary to make use of the bivalve, and only yield after persuasion, while if the Sims' position is suggested it is assumed readily; it is certainly much more comfortable and less exposing.

The speculum I have devised with the intelligent assistance of Messrs. Geo. Tiemann & Co. has in my practice obviated many of the objectionable features of vaginal examinations. As will be seen from the woodcut, it consists substantially of a handled Sims' blade with Heburn's flanges to separate the buttocks, and has running in grooves along the straight part of the handle a bar which terminates in a depressor for the ante-

rior wall similar to Baxter's. This mechanism is controlled by a ratchet and catch which is moved by the ball of the thumb and it can be pushed forwards a sufficient distance to expose almost any vaginal cavity. The depressor has two rounded ends of different lengths sliding on the bars, and are intended for long or short anterior walls. To use the instrument, it is anointed, the patient placed in the left lateral position, and it is inserted in the usual way. The movable catch of the rear end

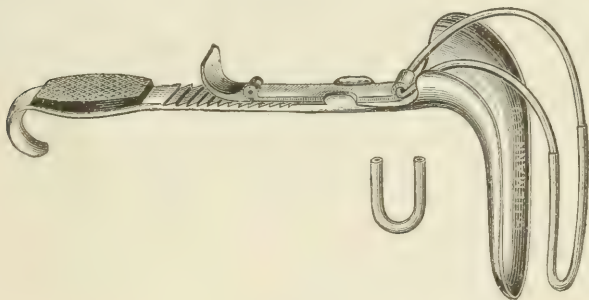


FIG. 2.

of the depressor is elevated with the thumb and it is pushed forwards as far as may be necessary. The instrument may then be transferred to the left hand in case the right is needed for operating. The fixation of the depressor by the ratchet will readily keep the speculum in position in most cases, so that both hands may be used if necessary. To remove the instrument, the catch is lifted and the elasticity of the vaginal sphincter forces the depressor back far enough for withdrawal.

This speculum is simple, inexpensive, easily managed, and can be kept clean without trouble, as there are no partly concealed holes or places to retain dirt. In my hands it has proved all I could desire.

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# TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

( A B S T R A C T . )

*Meeting, October 3d, 1882.*

## CYSTOCELE RELIEVED BY OPERATION FOR LACERATION OF THE PERINEUM.

DR. J. B. HUNTER related a case of very pronounced cystocele, in which it was his intention to do Emmet's operation on the anterior wall of the vagina, and afterward to repair the perineum; but the patient was extremely nervous, and opposed to taking ether; she would not allow both operations to be done at one sitting, and doubtless a subsequent one would be declined. He therefore simply did a deep perineal operation, inserting sutures far up on the posterior wall. He expected simply to improve her condition somewhat, but, to his surprise, the cystocele almost entirely disappeared, and she was now comparatively well, having no further trouble with the bladder.

## DELIVERY SUBSEQUENT TO REPAIR OF LACERATIONS OF THE CERVIX AND PERINEUM.

In connection with the foregoing case, DR. HUNTER said he delivered a woman in June last, on whom he had formerly performed an operation for a severe laceration of the cervix, and also for a complete laceration of the perineum. The child was born at full term, and weighed over seven pounds. Neither the cervix nor the perineum gave way, although the latter had a narrow escape. He mentioned the case because so many physicians feared a reproduction of the injury in delivery after operations. This was only one of several which he had seen in which no injury was done the repaired laceration at subsequent labors. Regarding the first case, that of cystocele, he added that he thought an unnecessary operation was often done on the anterior wall, since by repairing the laceration, a strong perineum was given to support this wall, and thus relieve the cystocele.

DR. A. J. C. SKENE had seen several cases of successful delivery without further injury after operations for laceration of the cervix and perineum, and regretted not having notes of them with him. He remembered one case distinctly. Many years ago, he restored a lacerated perineum, the laceration extending down to the sphincter, and at a subsequent confinement there was again laceration, but not at the site of the former one. He had seen several cases of delivery after restoration of the cervix, and had seen partial laceration follow, but never a complete bilateral laceration. He could readily understand why this should be so, for with the development of the uterus during pregnancy the compensation of normal tissue would be so great, and the scar tissue so insignifi-



cant, that there could be no more reason why laceration should occur than in a case in which it had not happened before. With regard to restoration of the perineum and its effects upon cystocele, he would say that for eight or ten years he had depended entirely upon this operation for the relief of cystocele. His experience coincided entirely with that of Dr. Hunter in the case related. He had little faith in the operation on the anterior vaginal wall. In reply to a question by Dr. Hunter, he said he thought the laceration of the cervix in two of the cases occurred at the seat of the original injury, or so near it that he could not tell that it was not in the same place.

DR. HUNTER remarked that, a few months after restoring a lacerated cervix, he could not determine by the touch where the injury had been; the tissue seemed to be no harder than the surrounding tissue. In reply to a question by Dr. Skene, he said he used silver-wire sutures in repairing the cervix and the perineum; smaller wire in the former case, larger in the latter.

DR. SKENE had operated in three cases on the cervix and perineum at the same time, but he used Japanese whale-sinew sutures on the cervix, and paid no attention to them afterward, and found that at the end of the month there was no trace of them left, and the results were good. He had never had a case do badly after the use of this suture.

With reference to the existence of cicatricial tissue some time after restoring a lacerated cervix, DR. A. S. CLARKE remarked that about five years ago he assisted Dr. Skene in restoring a cervix badly lacerated bilaterally, and he was sent for in June last to deliver the same woman, but when he arrived the child was born, labor having been very rapid. The child weighed ten pounds. There was no laceration. He examined the woman again lately, and no trace of a laceration could be found. He thought that, if any cicatricial tissue from the old operation had been present at this rapid dilatation and delivery, it certainly would have given way.

DR. F. P. FOSTER asked Dr. Skene what ground there was, if any, for supposing that cicatricial tissue running lengthwise of the cervix would offer resistance to dilatation.

DR. SKENE replied that, if the cicatricial tissue were considerable in quantity, it might possibly do so. He said *might*, but, in fact, he believed with regard to this canal and others, the rectum, etc., that no trouble would arise from the presence of cicatricial tissue unless the circle was completed. If, for instance, nitric acid or nitrate of silver were applied to the wall of the canal, the circle not being complete, but broken by healthy tissue, any tendency to contraction in the scars would be compensated for by the intervening healthy tissue.

DR. H. T. HANKS said that, in one of the first cases he ever operated upon for laceration of the cervix uteri, he delivered the patient of a child about eighteen months afterward without any injury to the cervix. Since then he had had a similar experience in several cases, one of which he remembered reporting when Dr. Emmet read his second paper on this operation.

Two years ago, DR. LEE performed an operation in the Woman's Hospital on a patient who had a very extensive double laceration of the cervix, so that very little of the true cervical tissue remained after its repair. An excellent result was obtained. He was particularly interested in the case, as the laceration had been so extensive, and she was a young woman and expected to bear more children. He was engaged to attend her in confinement last summer.

as she feared a recurrence of the laceration. Being unable to attend her himself, his associate, Dr. Swasey, was present, and reported that no laceration whatever had occurred. Dr. Lee examined her very carefully afterward himself, drawing down the cervix with the tenaculum, but he was unable to find any laceration. Regarding the so-called operation for cystocele, devised really not by Dr. Emmet but by Dr. Sims, he believed that Dr. Emmet himself had about abandoned it except it were in extremely marked cases; that at his clinics he usually did only the operation for restoring the perineum.<sup>1</sup>

DR. LEE remarked that he had certainly found the special operations which had been recommended for cystocele of late years of no benefit. In an operation for cystocele, he could well appreciate the difficulty of keeping the edges of the wound approximated, and preventing the sutures from cutting through the thinned or extremely attenuated vesico-vaginal tissue, and he had failed to obtain practically the results which were theoretically claimed for the operation; but he had obtained very good results by closing the lacerated perineum, and extending the operation up the posterior wall, as had been described by Dr. Hunter.

DR. M. A. PALLEN said he believed the operation upon the posterior wall of the vagina for the relief of cystocele was original with himself. Some of his views on the subject had been quoted in a recent number of the *British Medical Journal*. He would give them more fully at a future meeting of the Society. With regard to subsequent delivery without injury after operation on the cervix, he had met with several such cases—at least half a dozen—in his own experience. Some patients he attended at two subsequent labors, and no laceration took place. Last February he closed a double laceration of the cervix, and in July last attended the patient in labor. No laceration occurred either of the cervix or of the perineum, both of which he had operated upon for laceration. He had also had a number of cases in which no recurrence of laceration of the perineum had occurred at subsequent deliveries. With regard to the operation on the perineum for the relief of cystocele, the patient whose case he related at the last meeting of the Society while describing his method of operating, had had cystocele and cystitis, but since the operation she had been well.

DR. HUNTER said he was very glad to have had an expression of opinion with regard to the non-laceration of the cervix in parturition after an operation had been performed upon it, for he believed it was a very common opinion, not in this city, perhaps, but elsewhere, that an operation was useless if the woman expected to have children afterward. He remembered two cases in which the operation was indicated, but, under the advice of their physicians, the patients declined, saying they would wait until after the time of child-bearing. He believed that the cervix was just as liable to laceration after the operation as before, but no more so. He did not believe that any hardened tissue remained after the lapse of six months or a year.

In connection with the question of what suture should be used, DR. LEE asked Dr. Hunter at what period he usually removed the silver-wire sutures from the cervix in the number of cases in which

<sup>1</sup> [We are informed, on Dr. Emmet's own authority, that this statement is founded on a misunderstanding, that he still does the cystocele operation in well-marked cases of that deformity.—ED.]

he knew him to have operated upon both the perineum and cervix at the same time.

DR. HUNTER replied that he never had had any difficulty from them; that he usually removed them within three or four weeks. He inserted a small speculum, and had no difficulty in removing the sutures from the cervix, and did no harm to the perineum. He had allowed the wires to remain in the cervix two months without causing trouble. The patients were allowed to get up and go about, sometimes to go home. He had used the silk suture, and also the catgut, in two cases, in one case the result being good, in the other not so good. The silk gave a good result, but he preferred the wire, because at the time of the operation it could be tightened or loosened more readily in adjusting the parts. Having tied the knot in the silk suture, it could not be changed.

DR. LEE remarked that some claimed that if the patient was allowed to walk about, the wire suture would do damage, but Dr. Hunter's experience would go to prove the contrary.

In reply to Dr. Skene's question, whether the sutures became imbedded in the cervix, DR. HUNTER answered, No; they lay flat upon the cervix, and did not project within the vagina.

DR. CLARKE remarked that he must take issue with Dr. Hunter on the supposed increased facility of tightening the silver suture over the silk, if the latter were tied in a granny knot, and this kind of knot was found to hold sufficiently well in this operation if the silk were prepared as Dr. Skene prepared it. He had assisted Dr. Skene at this operation more than eighty, if not a hundred, times during the past five years, and for the last four years he had used the silk suture altogether. By tying the kind of knot referred to, it could be tightened afterward if found necessary, and yet he had not known it in any case to slip from swelling of the cervical tissues. He had better results from the silk suture than from the silver wire; it rarely cut, whereas the wire had often done so in his hands.

In reply to a question, DR. SKENE said he used the braided, not the twisted, silk.

DR. ALLEN protested against the poor quality of the silver wire in the market; it was not made from the pure silver. He hardly ever introduced as many as six sutures without one of them breaking.

DR. LEE said Dr. Clarke was particularly well fitted to judge of the comparative value of the silver and silk sutures, having had experience with both, and he asked which he had been able to introduce with the greater facility. Dr. Lee had generally made use of silver wire at the hospital.

DR. CLARKE replied that he had no doubt that the operation could be done in one-half the time with the silk suture that was required when the silver wire was used. It took a good deal of dexterity to tighten the silver-wire sutures, and get the parts properly coaptated, and a good deal of time on the part of the unskilled operator, whereas with the silk suture any one could coaptate the parts without any trouble.

DR. SKENE also spoke of the ease with which one was able to tighten the silk suture when tied as indicated, and he had never known it to show the least evidence of slipping during the healing of the cervix. It was much easier, of course, to remove it than to remove the silver suture.

DR. HUNTER remarked that the silver wire was not to be tightened by twisting, else it would almost certainly break, but by



pulling upon it with the forceps before twisting. He had not for years had the silver wire cut through. He thought it was a matter of comparatively little consequence what suture one used; almost anything would answer the purpose.

DR. LEE remarked that in fastening the wire suture in the vagina, while he was at present able to do it without trouble, he always felt that it was a difficult and embarrassing thing for the general practitioner to do, or the gynecologist who was not in constant practice in this operation. It was, therefore, a matter of considerable importance if the silk suture were found to possess advantages in this respect as spoken of by Dr. Clarke.

DR. SKENE remarked, referring to a statement made by Dr. Hunter, that he thought it did make a great deal of difference as to what kind of suture was used, whether silk, linen, silver, etc. The only reason why the silver wire was ever used as a suture was that it caused less irritation and consequent suppuration, and could be left in position longer. If the prepared thread which he employed was used, we had something which possessed all the virtues claimed for silver wire in this respect; but the same could not be said with regard to thread taken off the spool, etc. These latter were irritating, and liable to cause suppuration. He used to get silk of his druggist which was carelessly prepared, and it caused suppuration. He had the silk prepared in the following manner: Braided silk was soaked in hot wax five or six hours, until it became thoroughly saturated with it. The wax was prepared with carbolic acid and salicylic acid. Carbolic acid alone would not answer the purpose, since if the silk were kept for some time, the carbolic acid would disappear by evaporation. Silk prepared in this manner would not absorb moisture if left in the tissues a year. He had known a piece to remain in the cervix during pregnancy, and through delivery, and on removing it six weeks after delivery he found it to be still in good condition. More could not be expected of the silver wire. He had no prejudice against the use of silver wire; in certain operations it was preferable, as in vesico-vaginal fistula, where he would not dare use silk; but silk certainly offered greater facility in its use. In reply to a question by Dr. Lee, he said he would not use it in vesico-vaginal fistula, because it might lead the urine to follow a suture track, which was not desirable. It was possible, however, that it would answer perfectly well in this operation, but he had not yet tried the experiment.

Dr. Skene remarked that another advantage which silver wire possessed in the case of laceration of the perineum was its quality of stiffness. He would not dare use silk in a laceration through the sphincter. In lesser lacerations it gave as good results as silver wire.

DR. PALLEN said he had made a series of experiments at the University Medical College clinic with regard to the comparative value of the silk and silver-wire sutures. He used the silk and the wire suture at alternate clinics for some time, operating on as many as thirty patients at least, and, while he had not had a single failure with the wire, he frequently failed with the silk; it either cut out, or caused suppuration, and rendered a second operation necessary. This never failed when done with the wire suture. He used the best so-called antiseptic sutures sold at the shops. With regard to the time required to do the operation, it differed little whether the one or the other suture were used; the difference could not be more than ten minutes at most, and this was unimportant, especially if the patient were etherized. He had often done the operation with-



out etherizing the patient at all, particularly in former years. The longer he used the silver-wire suture the more he felt our indebtedness to Dr. Sims for popularizing the metallic suture; and, if he had never done anything else for the profession, that alone would entitle him to our gratitude.

DR. SKENE said that, in order to have this matter as well understood as possible, he would refer to the fact that, out of the eighty or probably one hundred cases which he had operated upon, there occurred but a single failure, and only five or six partial failures. In the case of the complete failure, the silver-wire suture was used. The patient subsequently came to his office, he closed the laceration with silk sutures, soon afterward removed the sutures, and the result was a perfect success. So that while he, with Dr. Pallen, felt gratitude to Dr. Sims for having introduced the metallic suture, because of the advantages which it possessed over other sutures known in the past, he did not think it should deter us from the use of a better one for certain purposes which had been since devised. The silk suture prepared as indicated was just as non-irritating, just as perfectly antiseptic, as the silver wire. But those which were for sale in the shops, so far as he had had experience with them, did not possess the qualities referred to. Dr. Sims' reputation did not depend upon the continued use of the silver wire in this operation; he deserved our gratitude for the good which his introduction of it had brought about, but, as Lister's name would remain great among us while Listerism itself would be superseded by something else, so might Sims continue in our gratitude though the silver-wire suture should be superseded by a better one. Besides being just as non-irritating and antiseptic as the metallic suture, the silk suture certainly offered greater facility in its use. The difficulty of manipulating half a dozen or a dozen silver wires, which tended to kink and become twisted together, was certainly opposed to facility of operating, especially in the hands of one not expert. In reply to a question by the President, he said he did not recall the exact proportions of the mixture in which he soaked the suture, but it was about five per cent of carbolic acid, perhaps a little less than that of salicylic acid. The important point, however, was the long immersion; an hour or two was not sufficiently long a time. If prepared as directed, the suture would not swell when left in water. In reply to a question by Dr. Foster, he said the advantages of braided over twisted silk were that it did not untwist, remained perfectly solid, and he thought it was stiffer. This preparation was almost as stiff as silver wire, and did not untwist before its use or afterward. The ligature was not fit for the tying of large vessels or a pedicle, as it would slip, whatever knot were tied, but it would not slip from ordinary swelling of tissues.

DR. CLARKE remarked that he thought a gain of ten minutes in the performance of the operation was considerable, especially if the patient were nervous and not etherized. He thought it usually required more than ten minutes longer to do the operation with silver wire.

DR. R. WATTS asked what objection there could be to doing the two operations—that for laceration of the cervix and perineum—at the same time. The objection seemed to be a very common one. He had done the double operation in a number of cases, at least eight or ten, and he had never had any trouble from the sutures in the cervix, although he left them in four weeks or longer, and menstruation had occurred in the mean time in several cases.

DR. PALLEN replied that his only reason for first closing the

laceration in the cervix was that in his earlier practice, with rough sutures, etc., in a number of cases the cervical operation was not successful, and if the double operation were done, he would have to wait for some time before operating on the cervix again, as the perineum was tender. At present, however, there could be but one objection to the double operation: that was the prolonged use of ether, extending at least over an hour and a quarter.

DR. HUNTER remarked that he had done the double operation on two patients at the hospital the day before within an hour and three quarters. He was the first to do the double operation at the Woman's Hospital. He had asked Dr. Thomas's and Dr. Emmet's opinion regarding it, and they advised against it. Nevertheless, he did it, and the result was successful. It saved time on the part of the patient.

DR. LEE remarked that he thought the objections offered against the double operation were imaginary—namely, the discharge which might arise from the repaired cervix coming in contact with the sensitive perineum, and, second, the liability to injury of the perineum in removing the cervical sutures. He had good results, although he removed the sutures within three or four weeks.

DR. Pallen remarked that it would not matter if the silver-wire suture were left in the cervix two months or longer. He had known it, however, to excite irritation in the glans penis in one instance, in which he and Dr. Sims had forgotten to remove all the sutures.

DR. SKENE remarked that in these cases there was almost always some prolapsus of the uterus, and one objection to doing the two operations at a single sitting was that, on account of the repaired perineum, treatment for the prolapsus and the attending discharge could not be continued so well. He introduced a tampon of marine lint, which he considered better than the douche, as the latter was intermittent, and might not remove all irritating matter; the lint kept the parts clean, contained antiseptic fluid, and retained the parts in position. He would say that the suture which he used was not made of silk, but of Japanese whale sinew, and this suture became entirely absorbed in about six days, which was sufficiently long to allow the parts to heal. In reply to a question by Dr. Hunter, he said that when he used the silver wire he removed it about the eighth day.

DR. HUNTER said he was accustomed to leave the suture longer than that, as in some cases he found union was not so strong at the eighth as at the tenth day.

DR. HANKS remarked that some years ago Dr. Peaslee performed the double operation at the Woman's Hospital, and was doubtful whether it would prove successful. It did, however, and Dr. Hanks had commonly done the double operation on the poorer class of patients, because they could not usually spare the time for two separate operations. He removed the sutures from the cervix generally from the third to the fifth week. No damage resulted when they were left in five weeks.

DR. HUNTER remarked that in the case of rich patients time might be spared for the two operations, and there was a certain advantage in doing the operations at separate times, as the greater ease of controlling possible hemorrhage, etc.

DR. W. R. GILLETTE had commonly done both operations at once, and he thought it was no more irritating to have a number of sutures introduced at the seat of the two injuries than a smaller

number at the single one. His results had been good; no injury arose from leaving the sutures in the cervix for some time. It was only a matter of convenience to the operator, in his opinion, whether one, two, or three operations were done at a single time.

LABOR COMPLICATED BY A FIBROID TUMOR OF THE CERVIX.

DR. HANKS was recently called in by Dr. J. H. Billings to see a patient who had been in labor about twenty-four hours. When he arrived, he found that the patient was thirty-three years of age, a primipara, who was having very frequent and, apparently, very severe pains. Dr. Billings was unable to say just what the presentation was. Upon making a vaginal examination, Dr. Hanks found a body nearly filling the pelvis, and, on closer examination, he became convinced that it was a fibroid tumor, so large that it completely obstructed the descent of the child's head. An hour later, with the assistance of Dr. Billington, they gave ether, and then found that, as the abdominal walls had relaxed, the uterus had receded considerably. He was then able to force the tumor above the brim and apply the forceps, and extract a living child. This could not have been done had ether not been administered. The mother and the child did well. The tumor was at least as large as one's fist, and was situated in the posterior cervical wall, the lower border being about half an inch from the external os. He remembered distinctly having had a somewhat similar case, in which the tumor occupied the whole of the posterior wall of the cervix. Dr. Thomas was called, and performed Cesarean section, but the result was fatal. It was impossible to perform craniotomy in that case. In this last case, they had since been able to feel several small tumors in the uterine walls. No hemorrhage had occurred. He would add that Dr. Thomas would at the present time use the scoop in a similar case, and enucleate the tumor, rather than perform Cesarean operation.

DR. LEE remarked that a similar case was reported in the last volume of the "Transactions of the Obstetrical Society of London." It was one of the most difficult, and also one of the rarest, complications of labor.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Stated Meeting, Thursday, December 7th, 1882.*

*Vice-President, DR. T. M. DRYSDALE, in the Chair.*

DR. R. P. Harris being called temporarily to the chair, DR. T. M. DRYSDALE reported the following case of



## UTERINE MYO-FIBROMA.

An unmarried lady, thirty-one years old, of Trenton, N. J., consulted me January 18th, 1879, as to the advisability of an operation for the removal of an abdominal tumor. On examination it proved to be a uterine fibroid, hard, smooth-walled, and moderately movable. It filled the lower part of the abdomen, and extended upwards to about an inch above the umbilicus. A peculiar feature in the case was the presence, in the lower part of the tumor, of a large vessel with an aneurismal thrill, which could be felt through the upper part of the left side of the vagina. As her general health was good, the tumor producing no inconvenience except by its size, and the menses regular in every respect, I advised against an operation and directed her to take chloride of ammonium, in ten-grain doses, three times a day, and, at her menstrual period, thirty-drop doses of the fluid extract of ergot at the same intervals.

She continued this treatment for two years, the tumor, in the mean while, slowly increasing in size. At the end of this time, finding no diminution in the size of the growth, and becoming discouraged, she abandoned all medicines. The tumor continued to grow steadily, but became much softer in its upper portion. An examination made, December 9th, 1881, showed the tumor growing in all directions. It now projected into the pelvis behind the uterus, filling this part with a hard, nodulated mass; while above, as has been stated, it continued to soften as it ascended, giving it the feel of a cystic growth.

From this time it continued to grow rapidly, and by July, 1882, it was pressing against the liver and filling the whole abdomen, except the epigastric and left hypochondriac regions. Her general health was seriously impaired, and she had emaciated considerably. On examination I found the uterus displaced towards the right side; the sound entered five and one-quarter inches in the same direction. When in the uterus, the sound did not follow closely the motions given to the tumor, while the tumor itself was found to be more fixed. The aneurismal vessel had enlarged considerably, and the thrill was much stronger.

Although I had dwelt upon, and fully acquainted her with all the dangers of such an operation, yet she was very anxious to have the tumor removed, and, as delay increased the danger, I proposed an exploratory operation with the understanding that, if the tumor could not be taken away with ordinary safety, it should be left undisturbed; but, in that case, if possible, the uterine appendages should be removed, and the arteries in the broad ligaments tied.

The operation was performed, Nov. 2d, 1882, in which I was assisted by Drs. W. P. Buck, W. S. Stewart, L. Harlow, of this city; Dr. I. Shellenberger, of Germantown; Dr. I. Eshelman, of San Francisco, and my son. An incision was made through the abdo-



minal wall, midway between the umbilicus and pubis, of about three inches in length, down to the peritoneum, which was cautiously opened, exposing a dark-red tumor with a rough surface. The structure of the tumor was soft, and it appeared highly vascular. Fearing to tear it, I passed my hand with extreme caution between it and the abdominal wall down towards the usual location of the ovaries, but could not reach them. Great difficulty was experienced in doing this, owing mainly to the rigidity of the abdominal walls, which kept them in close apposition to the tumor, and it required the exertion of considerable force to separate them. While thus attempting to reach the ovaries I, unfortunately, tore a small opening in the upper surface of the tumor, from which the blood flowed freely. It was found that this bleeding could only be controlled by pressure, for the structure of the growth resembled a sponge, and was so soft and easily torn that a ligature was worse than useless, as it would cut through the loose tissue, leaving a larger bleeding surface. It being impossible, then, to arrest the bleeding by any other means than pressure, I was compelled to continue the operation for the removal of the tumor. To do this the incision was extended to three inches above the umbilicus, and downwards nearly to the pubis. The tumor was attached above and behind to the mesentery, while beneath it was adherent to the broad ligaments and ovaries which lay under it; these bodies having been displaced to such an extent downwards and backwards, as to be completely out of reach until the tumor was raised. The pelvic portion was strongly adherent to the surrounding parts. The mass was removed from the abdomen with considerable difficulty, but, when this was accomplished, it was seen to spring directly from the fundus of the uterus by a broad pedicle. A large clamp was applied to this, and the tumor cut away. The adhesions were soft and brittle, and tore readily, leaving a rough, coarsely-granular, or spongy surface, and from every adherent point poured out blood. The main bleeding was from the adhesions around the brim of the pelvis and to the broad ligaments. The tissues about these adhesions were ragged, and the vessels difficult to secure, but I succeeded in arresting the hemorrhage. On raising the intestines, which had been thrust out by the contraction of the abdominal muscles, the torn mesenteric attachment was found to be bleeding freely. This surface required a great number of ligatures.

Immediately upon the withdrawal of the tumor from the abdomen, the patient became pulseless, the skin pale and moist, and, in fact, all the signs of intense shock presented themselves. This was before any serious hemorrhage had occurred. The active bleeding, which immediately succeeded, prevented any attempt at reaction, and although heat was applied, brandy given freely by the mouth as long as she could swallow, and hypodermic injections of brandy and morphia used, she sank and died just one hour after clamping the tumor.

¶ This case is of great practical interest in view of the strenuous advocacy, by many recent writers, of the operation for the removal of the uterine appendages, as a comparatively safe method of arresting the growth of uterine fibroids. It proves that in these large fibromas such an operation is not only hazardous, but may be extremely difficult, and that, in fact, we cannot even be certain that we can reach these appendages, for in this case, so completely buried beneath the tumor were the ovaries and ligaments that neither could be found until it was raised from its bed, when they were discovered adhering to its lower portion. In an operation which I performed last winter, the same difficulties were experienced; the ovaries could not be reached until the tumor, which was extremely large, weighing nearly a hundred pounds, was raised out of the abdomen. These, added to many other cases which I have met with, show that in large uterine tumors the removal of the uterine appendages may prove quite as dangerous as the extirpation of the growth itself, and be utterly impracticable unless the tumor is turned out from the abdomen. Now if this should have to be done in order to reach these bodies, which would of course necessitate the detachment of adhesions, and risk a shock by the disturbance caused by raising the mass, it would, undoubtedly, be better practice to leave the uterine appendages untouched and remove the tumor itself.

This case teaches another practical fact, which I have not found alluded to by writers on this subject, that when we meet with the soft variety of these growths, the certainty of hemorrhage difficult to control is added to the other risks of the operation, and if the character of the tumor is recognized in time, and the presence of extensive adhesions determined, the safest plan for the operator to follow is to leave the tumor untouched and close the wound.

DR. B. F. BAER (in response to a call from the chair) inquired of Dr. Drysdale the effects of ammonium chloride and ergot as administered by him in this class of cases. Does not ergot, when given during the menstrual flow, increase the quantity of the discharge? Does ammonium chloride have any effect in reducing the size of the tumor? He had used ammonium chloride a great deal, in fact he gives it in every case of uterine fibroid that comes under his care, but he has not seen or expected much from its employment; he considers it an alternative; it makes the patient feel better, but he has not seen any reduction in the size of the tumor follow its use; it relieves the painful flushings connected with the existence of a uterine fibroid or the menopause. He is not very sanguine as to the effects of ergot used in any way, hypodermically or otherwise, to reduce the size of a uterine tumor, and it certainly can effect nothing in the case of a pediculated subperitoneal uterine fibroid.

As regards the hazard of the operation under the conditions existing in the case narrated by Dr. Drysdale, it cannot be too strongly expressed, but there have been instances of recovery under conditions apparently as desperate as those just detailed. The case referred to by Dr. Harris (Chairman *pro tem.*) was operated upon by Dr. Goodell. The patient was a lady of middle age, who had

been suffering from profuse hemorrhage which was endangering her life. This hemorrhage was the result of the existence of a large uterine tumor, and Dr. Goodell decided to attempt oöphorectomy as a means for her relief. An incision three or four inches in length was made in the middle line of the abdomen. The large size of the tumor made it very difficult to reach the ovaries. One was, however, reached and successfully ligated, and removed without causing hemorrhage, although the pampiniform plexus was very much enlarged. It was necessary, in order to reach the other ovary, to enlarge the abdominal incision, and roll the tumor over. It was found and removed, but a large plexus of veins was ruptured in the turning, and the hemorrhage was frightful, the blood escaping from both ends of the vessels; ligatures were passed through the substance of the tumor, and finally succeeded in stopping the loss of blood. The doctor thought he might be compelled to remove the entire uterus to stop the hemorrhage. This had happened to Knowsley Thornton.

This patient recovered, but Dr. Baer had seen death from peritonitis result in similar cases from the exploratory incision alone, the tumor and ovaries being found to be in so vascular a condition that Dr. Goodell was afraid to complete the operation.

DR. HARRIS remarked that he was present at this operation, and was a close observer. The veins were ruptured during turning of the tumor; there was a peculiar anastomosis of the large venous trunks at the point of rupture. In this case the tumor had formed no adhesions.

Dr. Harris had been present at an operation by Dr. W. W. Keen in a similar case. The tumor was smaller, but the hemorrhages had been so profuse before the operation as to leave the patient waxen in appearance. In this case the tubes were tied close to the uterus, and were removed with the ovaries.

DR. BAER remarked that Dr. Goodell had been very successful in operating, by removing the ovaries for the cure of metrorrhagia, the consequence of uterine fibroids.

DR. GITHENS, in answer to the first query by Dr. Baer, remarked that, although not successful in relieving menorrhagia by the internal use of ergot, he had had very satisfactory results from the use of ergotine suppositories in cases in which there was no tumor present.

DR. A. G. B. HINKLE alluded to several cases in which he had used ergot for the relief of menorrhagia due to the presence of uterine fibroids; he had given it three days before the period, during, and for three days after its close; he also gave ammonium chloride in ten-grain doses, three times a day, all the time. This treatment had produced undoubted effects, and in some cases the tumors had disappeared.

DR. HENRY BEATES had used ammonium chloride in the treatment of a lady who had a large uterine tumor. He continued it for one year with marked effect. The menopause came on two years afterward, and the tumor has entirely disappeared.

Dr. Beates made some general remarks about the microscopical appearances in hard and soft uterine tumors, and thought that the effect of ergot would depend upon the presence or absence of muscular fibres as a component part of the tumor.

DR. DRYSDALE, in closing the discussion, urged upon the members the desirability of limiting the operation of the removal of the uterine appendages for the cure of uterine fibroids to small tumors, or to those in the early stage and which have not commenced to



undergo the softening process. He had noticed, in cases under his care, a small spot of softening begin in a previously hard tumor, and progress until the change was complete. The tumor presented this evening had undergone this change, and had undoubtedly assumed a malignant type. Before the operation it felt as if it contained a fluid. Since its removal it has shrunk to about one-half its original size from drainage of blood. From the description given during the debate, the tumor in the case of Dr. Goodell's differed from the one presented this evening in being much smaller, harder, and free from adhesions. The hemorrhage in his case came from a single laceration in the tumor, and could be controlled. In this case, not only did the torn substance of the tumor bleed, but every detached adhesion poured out blood in abundance.

In reply to Dr. Baer's questions, he would say that ammonium chloride in some cases of hard uterine tumors is remarkably efficacious in reducing the size of the growths; he has repeatedly seen them entirely removed by the remedy. He had never known ergot to increase the loss of blood during the menstrual period when used for the cure of intramural tumors; ergot has a decided effect upon the nutrition of these growths, but he would not expect it to act upon pedicellated growths unless inside the cavity of the uterus.

DR. HENRY BEATES had been called, in consultation, to see a case of metrorrhagia. Ten years previously, the patient had suffered from miscarriage at the fourth month, subsequently each menstrual period became more and more profuse and prolonged until, at the time Dr. B. first saw her, the loss of blood was constant, and the patient was pallid and reduced almost to a skeleton, her weight being but ninety pounds. The curette had been previously applied to the endometrium with the effect of increasing the discharge. Dr. Beates introduced a sound, which passed to the left to a depth of five and a quarter inches; he introduced a laminaria tent of the largest size, and next day, by digital examination, discovered a sessile tumor; further dilatation enabled him to remove the tumor by evulsion. It was necessary to divide it to deliver it through the os uteri. It was composed of fibrous and muscular tissue, and contained numerous dilated blood-vessels which had been the source of the hemorrhage before operation. Three years afterward, the patient's weight had increased to one hundred and fifty pounds.

DR. B. F. BAER read the following report of

A CASE OF LABOR WITH TWINS.

E. E., aged twenty-two, and single, entered Maternity Hospital on the morning of November 2d, complaining of pains resembling those of the first stage of labor, although her gestation was computed to have reached only the beginning of the ninth month. These pains, she stated, began on the previous evening. Later in the day I saw her. Inspection of the abdomen showed it to be greatly distended and irregular in shape. By palpation I could readily outline, as I thought, more than one fetus, and by auscultation I very distinctly heard the heart-sounds of two children—one high up and to the right, the other below the umbilicus and to the left. I diagnosticated twin pregnancy. Vaginal touch revealed the os uteri to be dilated to about the size of a silver half-dollar, the

lower segment of the uterus and cervix to be rather elongated than rounded, as in a presentation of the vertex. After a time spent in deliberation, a presentation of the feet was diagnosticated. The pains were not strong, and they had very little effect on the cervix. The patient was in a fair condition, though somewhat excited. Her lower extremities were edematous, her face a little puffy, and her urine contained a small quantity of albumen. The heart-sounds of the children were strong. I ordered fifteen grains of the hydrate of chloral and twenty grains of the bromide of potassium to be given at once. This dose was repeated once during the labor. Her bowels were moved by an enema.

Three hours afterwards the os was about double the size of that found at the first examination. The pains, still feebly acting on the presenting portion, had very little dilating power. As there was no special reason why the labor should be hurried, I waited two hours longer, at which time the feet were well down in the cavity of the pelvis, and projecting through the os, though the membranes were still unruptured. As the first stage of labor had now lasted twenty-four hours, and the patient was becoming tired, I felt that something more ought to be done to expedite the delivery; I therefore ruptured the membranes. One hour more was consumed before the feet reached the vulva. I now brought down the feet by extending the legs, and in a very short time after, without the least traction, the body followed as far as the shoulders, where it was arrested by extension of the arms. The arms were brought down as speedily as possible by carrying them forwards over the face. The child showed by its movements that it was still living, and the cord was feebly pulsating. The latter was relieved from pressure as much as possible. It was imperative that the head should be extracted speedily, or the child would die, but for some reason it would not descend. I at once recognized that the head was extended, with its long diameter in the conjugate of the superior strait, and that it was not yet fully freed from the grasp of the cervix, as the cause of the delay. I tried to flex the head and place it so that one of its antero-posterior diameters should correspond to the transverse of the superior strait, but could not, because, as I now recognized, the presenting portion of the second child was in the way. I could not reach high enough to bring the proper force to insure flexion of the head. I now very easily and quickly adjusted Simpson's forceps, when, by giving a slight oblique turn and carrying the handle of the instrument forwards, the head flexed and delivery followed almost immediately. Certainly, I think, not more than ten minutes elapsed from the time the body was expelled as far as the shoulders until the head was delivered. The child was alive, but in an asthenic condition, and, although the usual efforts at resuscitation were applied, it died soon after.

Examination now revealed a presentation of the right shoulder of the second child, and that the presenting part was projecting

through the superior strait. The membranes were unruptured. Version by the vertex was performed by the bimanual method, the uterus stimulated by friction and pressure on the fundus and the membranes ruptured. But the uterine contractions were very feeble, and it was some minutes before the head was secured from returning to its former position in the left iliac fossa, by having passed through the superior strait.

The uterus was now left to rest, with the hope that it would spontaneously regain enough power to expel the remaining child; but after waiting nearly an hour, and finding that the head had advanced very little, a drachm of the fluid extract of ergot was administered *per os*. This gradually spurred the uterus, and within thirty minutes afterwards the second child was born, or one hour and a half after the birth of the first. The uterus was so much exhausted that it was with difficulty made to contract by friction and pressure on the fundus, and it would relax again almost immediately afterwards. There was no evidence of separation of either placenta, in part or entire, because there was no hemorrhage. Therefore I concluded to let the organ rest for a time for the purpose of recuperation. I waited more than half an hour, of course not disregarding the liability to hemorrhage, open or concealed, and looking out for it. By this time the uterus was contracted pretty firmly around the placenta, which were attached in the neighborhood of the right cornu. I now tried again, very thoroughly, to express them by the Credé method, but failed. Traction on the cords seeming to indicate that the placenta were adherent, the only thing left to be done was the introduction of the hand. This I did with considerable difficulty. The uterus was firmly contracted at all points, except in the right upper portion, where it seemed to be paralyzed or prevented from contracting by the presence of the placenta. This gave to the organ the so-called hour-glass shape. The placenta were both adherent. I separated and withdrew them slowly, and held the emptied portion firmly by the external hand until contraction was secured. There was no further difficulty, and the patient left the hospital at the usual time.

I think the following points in the case of sufficient interest to warrant me in asking the Society's opinion on them:

1. The conduct of the first stage of labor. Ought I to have hurried it more, and thereby prevented exhaustion of the uterus? I think not. As it was, the os was not sufficiently dilated to allow the head to pass readily.

2. The delivery of the after-coming head. Placing the antero-posterior diameter of the child's head in the transverse diameter of the superior strait, and facilitating its passage, if necessary, by external pressure on the fundus of the uterus, the method so graphically described, and so earnestly and properly insisted upon by Prof. R. A. F. Penrose, as the proper plan of managing the head in ordinary breech presentations, was impracticable here, for the reason that that the second child was in the way, both of placing



the head transverse and of external pressure. Manual or forceps action on the head was the only resort. That I did not at once apply the forceps I am sorry, for delivery three minutes earlier might have saved the life of the child.

3. The choice of ergot in preference to the forceps as a means of facilitating the delivery of the second child. The administration of ergot for the purpose of expediting the delivery of the child cannot be too strongly condemned, as a broad rule, but that there may be an occasional exception I think must be admitted, and also, that this was one. The os and other soft parts were dilated by the passage of the first child; the pelvis was sufficiently capacious, the presentation and position normal. There was, therefore, no obstruction to the rapid passage of the child were the power furnished by the action of the ergot. Moreover, that the uterus was worn out, and wanted time and stimulation to recover, was proven by the history of the labor, as related. There would have been great danger of hemorrhage had the forceps been used to rapidly empty the uterus.

4. Morbid adhesions of the placenta, causing irregular contraction of the uterus, or contraction of the organ in every portion, except opposite the attachment of the placenta, where the contraction was not strong enough to separate them, giving the so-called hour-glass form to the uterus.

5. What influence had the ergot, if any, in inducing the irregular contraction? From my own experience, I would answer that I do not think it had any; first, because I almost always give ergot as soon as the child is expelled, and before delivery of the placenta; and, second, because I have never met with irregular contraction of the kind under discussion except in cases where the placenta was morbidly adherent.

The question, May ergot complicate the third stage of labor, by acting on the circular fibres of the uterus, at the internal os for instance, independently of the oblique and longitudinal fibres, incarcerating the placenta thereby? I should like to hear discussed. I take a negative view.

6. The presentations were unusual. The first child usually presents by the head, the second by the breech or feet. In this case the first presented by the feet, the second by the shoulder.

They were both males, and weighed conjointly twelve and a half pounds. The first child was the smaller of the two. This is unusual.

DR. HARRIS had had under his care a woman in labor with twins. The first one delivered was a female weighing eight pounds; it presented by the breech. After it came away, the os uteri and soft parts contracted, and an examination, made by one who did not know of the delivery of the first child, would not have discovered evidence of the fact but for the presence of the cord. The bag of waters presented, and the os uteri was again dilated. Three and a half hours after the birth of the first child, the second, a male, was delivered by assistance of the forceps; its weight was nine pounds.

DR. HORACE WILLIAMS related his experience in a case of twins. The first child descended in the fourth position and no rotation occurred, as it was held so by the second child. The pelvis was roomy, but laceration of the perineum resulted.

## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, December 21st, 1882.*

DR. T. GAILLARD THOMAS read a paper entitled

A CONTRIBUTION TO THE SUBJECT OF THE REMOVAL OF THE UTERINE APPENDAGES (TAIT'S OPERATION) FOR RECURRENT PELVIC INFLAMMATION.

In the *British Medical Journal* for July 29th, 1882, Mr. Tait enunciated views which were entirely at variance with those heretofore held and accepted with reference to certain pelvic diseases, and also made extended remarks on the diagnosis and treatment of chronic inflammation of the ovaries. Since the time of Bennett, of England; Simpson, of Scotland; and Sims, of America, a vast deal of attention had been given to affections of the uterus and of the vagina, etc., while disease of the ovaries and of the Fallopian tubes had been left in a cloud of ignorance and uncertainty. Tilt, a firm and constant advocate of the claims of ovarian pathology, had stood almost alone, and had enunciated views with which only few sympathized, and still fewer indorsed and sustained. The views which had been advanced by Tait seemed to be those of an original surgeon, and were distinct, and if accepted, would open a new field and exert upon this department of medical science an entirely new influence. The most original and valuable views enunciated by Tait were embraced under the following heads:

1. He assumes that the view formerly held that laparotomy and allied operations should be postponed until absolute risk to the life of the patient render them necessary, should be abandoned; and that, in the hands of the expert, they are so far from dangerous as to be justifiable even when life is not jeopardized by disease.

2. That the usually accepted doctrine that menstruation depends upon ovulation is entirely erroneous.

3. That the ovaries have nothing whatever to do with menstruation, and that this phenomenon is dependent upon the Fallopian tubes.

4. That many of the bad cases of abnormal menstruation are relievable only by extirpation of the ovaries and tubes.

5. That, in chronic ovarian disease, the Fallopian tubes are chiefly at fault.

6. That the mortality has been only one in his last thirty-five operations; and that this slight loss of life was susceptible of diminution in the future.

7. That all those cases heretofore regarded as instances of menstrual recurrent pelvic cellulitis or peritonitis are really tubal dropsy and ovarian disease. The last statement was not made in the paper alluded to, but had been received from Dr. T. A. Emmet, who obtained it from Mr. Tait in a private conversation.

Dr. Thomas further stated that removal of the uterine appendages had nothing whatever to do with the subject of ovariectomy; that the latter operation was resorted to for the removal of large or increasing tumors, which, if not removed, almost invariably destroy life within a few years. The removal of the uterine appendages, or Tait's operation, was performed for severe menstrual disorders and nervous disturbances, which did not so much jeopardize the life of the patient as make it miserable and almost intolerable. The history of ovariectomy was well known. The history of oöphorectomy and its modifications could be summed up in a few sentences. In July, 1872, Hegar, for the relief of certain constitutional disturbances, extirpated ovaries not affected by tumors. Five days afterward, the operation was performed by Tait in England. Neither of these operations was published. In August of the same year, Dr. Robert Battey, of Georgia, not only performed the operation, but had it published to the world, and obtained for it the consideration of the profession. Credit had been chiefly accorded, and deservedly so, to Battey, although he was immediately preceded by two other operators. The operation to which Tait lays claim, consists in the removal of the Fallopian tubes as well as of the ovaries, because he believes in that way alone can menstruation be controlled, and also because he regards tubal disease the more important of the two pathological factors, as invariably present in chronic ovaritis. Dr. Thomas did not propose to consider Tait's views in an analytical manner, but simply to report four cases in which tubal dropsy existed, associated with chronic ovaritis, as described by Tait. The cases reported were too recent to permit conclusions to be drawn with regard to ultimate results.

CASE I.—A colored woman, 30 years of age, the mother of one child eight years old, had suffered from menstruation or recurrent pelvic inflammations, due, as has heretofore been supposed, to some unknown influence. Her uterus was large, anteverted, and gave forth too free menstrual flow. Thinking that perhaps profuse menstruation was due to fungoid degeneration of the lining membrane, Dr. Thomas carefully curetted the entire mucous surface of the uterus, but, to his surprise, removed only a very few fungoid growths. An anteversion pessary was introduced, and resulted in absolute harm. Upon more careful examination, he detected enlarged ovaries, and strongly suspected that it was one of the cases in which ovaritis and tubal dropsy were coincident. Further examination convinced him more and more of the truth of this suspicion, and he decided to make an explorative incision, and, if the condition existed, to perform Tait's operation.



The incision was made, one ovary was found cystic and its Fallopian tube was large and felt very much like a coil of intestine. The tube, the ovary, and the ovarian ligament were ligated and removed. The same condition existed upon the opposite side, and the same procedure was adopted. This, together with all the subsequent operations, was performed under the strictest antiseptic precautions, except with regard to the use of the spray. The patient made a prompt recovery. One menstrual period had passed and no sanguineous flow had occurred. The specimen was presented.

CASE II.—The patient was twenty-five years of age, had been married three years, was the mother of one child eighteen months old. She entered his service in the Woman's Hospital. Her menstrual history began at the age of seventeen, and before marriage gave her no trouble whatever. Nine months after confinement she had an attack of pelvic inflammation, which occurred just at the time of the cessation of the first menstrual period after confinement. Lactation had ceased. It was probably an attack of cellulitis or peritonitis. Similar attacks had been repeated. There was a constant leucorrhœa and difficulty in locomotion. There was partial laceration of the cervix and perineum. There was a mass the size of a hen's egg in the position of the left ovary, and there was exquisite tenderness in the ovarian region and all about the uterus. Dr. Thomas decided to make an explorative incision, to be followed by Tait's operation, if the condition proved to be such as to warrant it. Some cysts occupied the ovary, and the tubes were distended with a large accumulation of pus. Both ovaries and tubes were removed, and could be seen in the specimen presented.

At this point Dr. Thomas remarked that, while Battey's operation could be performed without coincident removal of the tubes, the latter procedure could not be performed without removal of the ovaries.

This patient recovered without any remarkable rise of either the temperature or the pulse.

CASE III.—Miss —, twenty-two years of age, entered his private hospital. Her menstrual life began at the age of fourteen, and at the first epoch she suffered from severe dysmenorrhea. During the last year the pain had been almost constant, lasting throughout the entire interval, and greatly increased at each menstrual period. Physical examination revealed enlarged and somewhat prolapsed ovaries, although the prolapsus was not marked. He was unable to discover any enlargement of the Fallopian tubes. Dr. Emmet had previously examined the patient and believed that he found evidences of pelvic inflammation. Dr. Thomas removed both ovaries and tubes, and found the former filled with small cysts and the latter distended with pus, and the lining membrane inflamed. The pus, however, was not confined to the cavity of the tubes. The condition present was that which had been described by the older writers as "profluent dropsy of the tubes."

The specimen was accidentally lost. The patient recovered without an unfavorable symptom. No menstrual discharge occurred at the next period, and the patient was perfectly comfortable.

CASE IV.—Miss —, aged twenty-seven years, entered his private hospital. Her menstrual life began at the age of fourteen, and she suffered from severe dysmenorrhœa up to two years ago. From that date she had been a constant invalid on account of repeated attacks of pelvic peritonitis occurring at the menstrual period. In September last, one of these attacks occurred, and the patient nearly lost her life, the temperature rising to 104° F., the pulse to 140, and there was excessive pain. At the time of the operation she was emaciated, exceedingly pale, and there was a depreciation of vital forces which resembled that seen in the third stage of pulmonary consumption. Her temperature was 100° F., the pulse 115 to 120, the stomach was irritable, and she suffered from never-ceasing pelvic pain. The ovaries were not very much diseased, although they contained a number of small cysts, but the Fallopian tubes were in a condition of tubal dropsy, and throughout their entire extent were firmly bound down by adhesions. The operation was tedious and difficult, and at its conclusion no one who witnessed it could avoid making an unfavorable prognosis. The patient died on the sixth day. The specimen was presented.

These cases made up Dr. Thomas' entire experience with reference to this subject. All that he aimed to do in the paper was to hold up the views of a brilliant and an original investigator. Tait's immediate results from oöphorectomy had been, like Keith's and Wells' from ovariectomy, exceedingly gratifying. Out of 75 cases there had been only 6 deaths; out of the last 61 cases there had been only 3 deaths; and out of 35 operations for pure chronic ovaritis with tubal dropsy, there had been only 1 death. No such records had been made in this country. The question why statistics were better in Europe than in this country was interesting and important, and it behooved American operators to look at the matter in a most careful manner, and endeavor, if possible, to determine why the success had been greater there than here.

DR. T. A. EMMET remarked, with reference to Tait's operation, that he had had no personal experience in its performance. He had seen a number of cases in which it had been performed, and must say that he saw nothing else, when abroad, which interested him so much, and at the same time puzzled him exceedingly. He saw in Tait's collection sixty specimens which had all been removed within the last eighteen months, and it was surprising to him where all these cases could come from, and what could be the explanation. Whether the condition of affairs described by Mr. Tait was more common there than in this country, he was not prepared to say. Many years ago he had the opportunity to perform a large number of autopsies among immigrants, and he had never seen the condition referred to more than a dozen times. He asked more particularly as to what would be his guide with reference to performing the operation, and Mr. Tait was unable to give him any answer, except that in all cases of chronic pelvic inflammation

which did not get well of themselves within a reasonable time, he opened the abdomen and invariably found this dropsical condition of the tubes, distended with either serum or pus. Dr. Emmet was also surprised at the success of the operation abroad, and had opportunity to see that the women upon whom it had been performed had been very much improved by it. The improvement which had followed the operation had been something beyond conception. There seemed to be no question with reference to Tait's success, but with regard to this operation upon the broad ligament, he was not prepared to perform it at present. He wished to wait a little further for additional light upon the subject.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON. (ABSTRACT.)

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*Meeting, Wednesday, Nov. 1st, 1882.*

DR. J. MATTHEWS DUNCAN, *President, in the Chair.*

### INTERSTITIAL OR TUBO-UTERINE GESTATION.

MR. ALBAN DORAN exhibited a specimen of this condition. The gestation-cyst was situated at the right side of the fundus uteri. At the anterior and outer aspect of the cyst, the round ligament sprang from it, and the Fallopian tube passed into it, expanding, as it did so, into a funnel-shaped orifice. At the opposite aspect the cyst bulged into the uterine cavity, and a bristle could be passed from the uterus through the tube into the cyst; the tube being here also dilated into a funnel shape at its entrance into the cyst. The tubal origin of the cyst was thus proved. It had burst at the second month. There was a corpus luteum in the right ovary. Mr. Doran had examined other cases of the kind in the London museums and gave an account of them. He remarked on the rarity of the condition and the tendency to early rupture. Had the abdomen been opened, amputation of the uterus would have been the only practicable treatment. He thought that cases in which development in a supposed hernial pouch of the uterus was suspected, were probably tubo-uterine.

### HERMAPHRODITE.

DR. CHALMERS exhibited the genito-urinary organs of a child in which the internal parts were female, while the external resembled those of the male. The clitoris was grooved below, but not channelled.

MR. DORAN said that grooving, and even channelling, of the clitoris was normal in some of the lower animals.

DR. FANCOURT BARNES informed the Society that the child he had exhibited at the last meeting had since died, and proved to be a female.

DR. CHAMPNEYS exhibited the genito-urinary organs of a female



with extroversion of bladder, described by him in the St. Bartholomew's Hospital Reports. The external genitals were such as might belong to either sex.

#### TUMOR OF PLACENTA.

Dr. Galabin showed (for DR. J. C. ROBERTS) a placenta in which was imbedded a tumor about the size and shape of an adult human heart. It was encapsuled, and on the uterine side covered by a complete layer of placental tissue. Near it were several small similar detached masses.

#### DESCRIPTION OF A KYPHOTIC PELVIS, WITH REMARKS ON BREISKY'S DESCRIPTION.

By DR. CHAMPNEYS. The pelvis, except for slight asymmetry and a process which the author termed "posterior spondylo-listhesis," was a typical kyphotic pelvis. The author criticised Breisky's description, laying stress on the influence of sitting which, in the kyphotic pelvis, he believed increased the inversion of the tubera ischii, while in the flat pelvis it increased their eversion: the difference depending upon whether the deformity caused the tubera ischii to be inside or outside the line transmitting the body weight: *i. e.*, the sacro-iliac synchondrosis.

#### PUERPERAL DIABETES.

A paper on this subject was read by DR. MATTHEWS DUNCAN. The author pointed out the distinction between the slight glycosuria of pregnant and suckling women and real diabetes, with its polyuria and large amounts of sugar. Physicians and surgeons were well aware of the dangers introduced into their cases by complication with diabetes. But the subject of diabetes complicating pregnancy and parturition had attracted almost no attention; and this probably arose from its rarity, which might be accounted for by the disease frequently destroying in woman the sexual energies as it is said to do in man. The author had collected twenty-two cases in fifteen women, and they demonstrated the great gravity of the complication, as respects both mother and child. Of the 22 pregnancies (including those ending prematurely), 4 had a fatal result soon after delivery. In 7 of 19 pregnancies in 14 women, the child after reaching a viable age died during pregnancy. In 2, the child was born feeble and died in a few hours; making an unsuccessful issue in 9 of 19 pregnancies. The histories showed that diabetes may supervene on pregnancy; that it may occur only during pregnancy, being absent at other times; that it may cease with the cessation of pregnancy; that it may come on after parturition; that it may not come on in a pregnancy occurring after its cure. They showed that pregnancy may occur in a diabetic woman; that it may be not appreciably affected in its natural progress and termination by the disease; that it is very liable to be interrupted by death of the fetus.

DR. JOHN WILLIAMS thought that these cases were less infrequen

than was supposed, owing to the fact that the urine was not always examined. He had met with four. A trace of sugar in the urine was common, but this was not diabetes.

DR. ROBERT BARNES had investigated the condition of the urine in pregnancy, as to albumen, urea, and sugar. The occurrence of sugar was physiological, though not constant. Sinéty had shown that sugar appeared in the urine when lactation was suppressed: this was of interest in connection with the normal fatty change in the liver shown by Tarnier to occur in pregnancy. He (Dr. Barnes) drew a parallel between albuminuria and glycosuria during pregnancy. Both were physiological, but might pass the physiological boundary and then grave accidents ensued.

DR. CHAMPNEYS inquired as to the treatment.

DR. CARTER said that the tendency of diabetics to collapse and coma would make us expect danger from pregnancy and labor.

THE PRESIDENT said that the terribly fatal complication he had been describing had no relation to normal glycosuria. He thought, with Dr. Williams, that, attention having been drawn to the subject, more cases would be published. He could lay down no special rules as to treatment.

#### ON THE TREATMENT OF POST-PARTUM HEMORRHAGE BY HYPÔDERMIC INJECTIONS OF ERGOTININE.

A paper on this subject was read by DR. C. CHAHBAZIAN (Paris). Ergotinine was the alkaloid of ergot of rye, insoluble in water, soluble in alcohol or chloroform. One pound of powdered ergot yielded three grains of ergotinine. It was indicated in post-partum hemorrhage due to imperfect contraction of the uterus. The dose for hypodermic injection was five to ten minims of a solution containing one fiftieth of a grain in twenty minims. This might be repeated if necessary, but more than twenty minims should not be given. This produced strong and permanent contraction of the uterus, acted more quickly than ergotin (which was only an extract of ergot), and did not cause local abscesses or indurations. Ergotinine was to ergotin as morphia to extract of opium. It was discovered and prepared by Tanret of Paris.

DR. CHAMPNEYS inquired how long ergotinine would keep.

DR. WILTSHIRE suggested that the hypodermic injection of ether might, with advantage, be combined with that of ergotinine.

DR. BRUNTON asked how long ergotinine took to act.

DR. CHAHBAZIAN said that uterine contraction usually came on in from two to five minutes after the injection of ergotinine. He could not say how long it would keep.

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## REVIEWS.

THE PATHOLOGY AND THERAPEUTICS OF THE DISPLACEMENTS OF THE UTERUS, by DR. B. SCHULZE, Professor of Gynecology at Jena. Berlin, 1881, pp. 246.

Schulze's book is composed of two parts, of which the first treats

of the displacements of the womb in a general way, while the second part is devoted to a study of the different forms of displacements.—*Part I., Chap. I.* discusses *the normal position of the uterus*. It is well known how differently this normal position has been described, which was mainly due to the fact that most authors based their descriptions on the position of the uterus as found in the dead body. Here, in most cases, the uterus is retroverted, touching with its posterior wall the anterior wall of the rectum—a position which it assumes by merely following its weight. Sch. deserves credit for his untiring efforts to correct such false teachings. He justly claims that the only true way by which one may gain a correct information as to the normal, *i. e.*, most common position of the uterus, is by examining living women, with both hands, the index finger of one being introduced into the vagina, the other touching the abdomen from the outside. According to Sch., the uterus is normally anteverted and slightly anteflexed; it is endowed with great flexibility, bending especially forward and backward according to the filling of bladder and rectum and the action of the abdominal muscles. *It is therefore principally muscular action which maintains the position of the uterus.*

*Chap. II.* contains the *definition of displacements, their classification and statistics*. Clinically we speak of displacements if any deviation from the normal position of the womb has become persistent, *i. e.*, if the natural tone and elasticity which permit the flexibility of the uterus have been lost. Sch. puts the displacements under the following heads: Elevation, descensus and prolapsus; anteposition, retroposition, dextroposition, sinistroposition; anteflexion, retroflexion, dextroflexion and sinistroflexion; torsion, inversion, and hernia of the uterus.—The statistics of displacements are of no value as long as there exists amongst authors the present confusion about the principle upon which to base such remarks.

*Chap. III., Symptoms and diagnosis of displacements.*—A symptom common to most displacements is dysmenorrhea. The text-books say that the pains preceding the flow depend on the difficulty of the blood in passing through the flexion. Yet it is easy to demonstrate, by inserting a sound when the pains are at a climax, that there is not one drop of blood present in the uterine cavity. Indeed, the real cause of dysmenorrhea is not stenosis but metritis. Stenosis is not so common as one might be led to expect from the statements of many practitioners who generally base their diagnosis upon the difficulty they find in trying to sound the uterus. Yet, how often is the sound used before the probable direction of the cervico-uterine canal has been ascertained by bimanual examination. Sterility also depends not so much on the displacement of the uterus as on the accompanying endometritis. Discussing the diagnosis, Sch. speaks at length of bimanual palpation and his way of conducting an examination. For uterine sounds he recommends such made of silver or copper as being flexible. The convex surface should be ruled in centimetres.

*Chap. IV., Anatomy, Etiology, Indications.*—Since it has been demonstrated that muscular action is the main factor in maintaining the uterus in its normal position, for which reason, in the dead body, we so often find the uterus in a quite different position, we must expect that a displaced uterus which, to a certain extent, continues under the influence of the abdominal muscles, will not, in the cadaver, present exactly the same features as in the living, except in the rare cases of firm fixation in a certain position, which fact has to account for the meagre knowledge we possess of



the anatomy of displacements. As to etiology, Sch. calls attention to the great importance of parametritis in causing displacements. Also in girls and virgins we find that old peritonitis and cellulitis play a great part in producing displacements. As causes of parametritis, besides parturition, he mentions habitual retention of urine and feces, both producing relaxations of the uterine attachments and chronic inflammatory processes. Uterine catarrh is a very frequent cause of peri- and parametritis. It seems that in such cases the narrowness of the genital tract favors stagnation and decomposition of the secretions, and ultimately inflammation of the lymphatic vessels. The truth of this statement is shown by the rapid action of antiseptic injections.

*Part II., Chap. VII. Anteversion and antelexion.*—This being the normal condition, we must be careful in making the diagnosis of pathological anteversion. Imperfect involution and chronic metritis are its common causes. Sch. emphatically objects to the use of pessaries. In rare cases he would perform Sims' operation of shortening the anterior vaginal wall. *Antelexion* is also mostly produced by metritis and parametritis, causing retraction of the sacro-uterine ligaments. The symptoms of antelexion depend on parametritis complicated with catarrhal endometritis, the angular form of the uterine cavity rendering the latter the more persistent on account of the secretions. Sch. uses no pessaries, but treats the old cellulitis and its consequences. Etiologically Sch. lays great stress upon the prolonged retention of urine and feces.

*Chap. VIII. Retroversion and retroflexion.*—As to the treatment, Sch. claims that reposition should never be made with the sound, but always with both hands as described; the patient being perfectly anesthetized. Sch. seems very sanguine as to the treatment of retroflexion. "*It is to be hoped,*" says he, "*that the profession at large will soon recognize the perfect curability of most cases of retroversion.*" (!?) In order to retain the replaced uterus, he uses an S-shaped copper wire pessary covered with rubber, which he bends according to the requirements of each case.

*Chap. IX. Descensus and prolapsus.*—Sch. claims that retroversion is the first step towards prolapsus uteri; it turns the axis of the uterus so as to be continuous with the axis of the vagina, thus offering the least resistance to the action of the abdominal muscles. As to the treatment, Sch. gives a fair statement of the different operations lately recommended. He considers Simon-Hegar's as being the most reliable. In young patients likely to become pregnant again, he recommends Winkel's operation; in old women with intact perineum, Sims' anterior elytrorrhaphy. However, he is not enthusiastic about the operation, and thinks that much good could be derived from a proper use of a copper wire pessary.

*Chap. XI. treats of inversion of the womb.* Under this head Sch. speaks also of the ectropion of the cervical cavity as caused by laceration, though this hardly seems the proper place for discussing such an important affection.

Taking a general survey of Sch.'s book, I find that it is an excellent contribution to our special branch of medicine; it treats of all the possible displacements in a way which recommends itself to the student. It seems that everything is well digested. One might find, for the same reason, that the book is one-sided, giving principally the opinion of the author. But I ask, of what use are the numerous compilations from the works of former writers? Old fallacies are thus transferred from one generation to another,

as, for instance, the statement that dysmenorrhea is caused by retention of blood, whereas Sch. shows that it depends on concomitant endometritis. Sch.'s book has the stamp of originality throughout. Perhaps he is at times too enthusiastic, as, for instance, as regards the cure of retroflexion and retroversion. Yet he so convincingly describes the reposition of the uterus by manual manipulation and the application of his 8-shaped copper wire pessary, that one will feel induced to faithfully try his directions for the relief of a disorder which, so far, has been regarded as a burden not only to the unfortunate patient, but also to the unfortunate doctor. A principal feature of the book are numerous diagrams which leave no room for mistakes. However, some of them are to be taken *cum grano salis*, as, for instance, Nos. 66 to 69, where he describes the reposition of the womb. It would indeed be pleasant if we could always grasp the fundus uteri in this way. Although there is no doubt that bimanual examination is not practised as generally as it deserves to be, there are still many cases of fat fleshy women where it is impracticable and where we cannot dispense with the use of the sound.

On the whole, the disposition of the subject is logical and simple, the printing is well done, and the style is fluent and agreeable. I heartily recommend a careful perusal of the book. H. BANGA.

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## ABSTRACTS.

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1. Fischer: Partial Resection of the Bladder (*Centralbl. für Gynäk.*, No. 41, 1882).—The author makes the following queries concerning experiments upon dogs:

1. Should the operation, when performed upon dogs, be done with strict antiseptic precautions? 2. Is the intentional wounding of the bladder accompanied with great danger? 3. Has the wound of the bladder, which is closed with sutures, a tendency to heal? 4. What kind of a suture is most fitting? Eight experiments were made, in which large pieces were removed from different parts of the bladder, and the wounds were united with sutures. As a result of these experiments, he answers the queries as follows: 1. No antiseptic precautions are necessary. 2. Intentional wounding of the bladder is not dangerous. 3. With a nicely adjusted suture, the tendency of such wounds is to heal. 4. Catgut is the most suitable material for sutures. He considers that the indications for partial resection of the bladder, in the human subject, are the following: 1. Traumatic lesions which cannot heal without resection of the edges of the wound. 2. Diverticula of the bladder, as in cases of encapsuled calculi. 3. Prolapsus of the bladder, of an aggravated nature. 4. Extensive dilatation of the bladder, leading to insufficiency of the detrusor urinæ. 5. Benign and malignant new growths. 6. Fistulæ between the bladder and the neighboring organs. 7. Destructive ulceration of the bladder, with threatened rupture of that viscus. The operation upon the human subject offers good chances of success. 1. Because it can be performed aseptically. 2. Absolute rest can be im-

posed upon the patient. 3. We can subject the bladder to mechanical treatment after the operation. 4. The relations of the human bladder to the peritoneum are more favorable than they are in the dog. [If this entire subject had not been settled, long since, in the treatment, more especially of fistulæ of various kinds, it might be worth while to discuss it. We have had occasion to remark that valid inferences cannot be drawn from experiments upon the lower animals, especially with reference to those which involve the peritoneum. We have removed the gravid uterus from the cat, with scarcely an evidence of shock following, and have seen the entire wound healed, with the exception of that portion in the immediate vicinity of the stump (which was stitched into the wound), and the animal running about, in four or five days.]

AND. F. CURRIER.

**2. Behm: Intrauterine Vaccination** (*Centralbl. für Gynäk.*, No. 40, 1882).—Behm vaccinated thirty-three pregnant women in the eighth, ninth, and tenth months of gestation. Cuts in the skin were made, and humanized lymph, for the most part, was used. In four cases there was failure; in twenty-two there was complete success; in seven it was only partial. Of the thirty-three children, twenty-five were vaccinated with success, and the others without success. In six of the latter, the lymph was not good. In one of the others the lymph was good, and the vaccination carefully done; hence, there is a probability that intrauterine vaccination had occurred. In the remaining case no certain report could be made. The advantage of vaccination to pregnant women is great, on account of their greater liability to the disease when in such a condition. New-born infants experience less constitutional disturbance from the operation than they would at a later period.

AND. F. CURRIER.

**3. Bruntzel: Lipoma of the Right Labium Majus as a Complication in Childbirth** (*Centralbl. für Gynäk.*, No. 40, 1882).—This is the history of a case in which such a complication occurred. The patient was a primipara, thirty-three years of age. The tumor had existed four years, was about the size of a hen's egg, and had never given her any trouble, excepting from an occasional prolapse after severe efforts. At the time when the author first saw the patient, the tumor had prolapsed and filled the introitus vaginæ. It was easily pushed aside, but as easily came down again. After the woman had been in labor twenty-four hours, the tumor was drawn out and held to one side by means of a towel, and the child was delivered with the forceps without rupturing either the perineum or the tumor. The latter had seemed to develop on account of the pressure which had been brought to bear upon it during the labor, and afterward seemed harder and less movable. The latter facts caused a change in the diagnosis which had originally been that of hernia labialis. Three months later the tumor was removed, as it had become a source of great annoyance to the patient. AND. F. CURRIER.

**4. Gonner: Carcinoma of Vulva** (*Centralbl. für Gynäk.*, No. 42, 1882).—Out of nine hundred cases treated in the gynecological clinic at Basle, between the years 1873 and 1881, 0.5 per cent were treated for carcinoma of the vulva, this being 5 per cent of all cases of carcinoma of the genital organs. Five cases in all were operated upon, the results being as follows: 1. Thirty-six years of age, operated upon Oct. 9th, 1873. Two large ulcerating sores were upon the right labium majus, the surround-



ing tissue being infiltrated. They were first noticed two years previous to the operation, long remaining as only a hard itching nodule. Both were removed with the galvano-caustic knife. After several years there was no evidence of a return of the disease. 2. Thirty-five years of age, operated upon June 11th, 1877. Disease had lasted eight months. The clitoris and both nymphæ had been invaded by a tumor marked by lumps and ridges. The inguinal glands were not enlarged. The growths were removed with the galvano-caustic wire, and sutures were used wherever it was feasible. A year and a half later no return of the disease was evident. 3. The patient was sixty-four years of age, and was operated upon May 26th, 1879. There was a growth behind the posterior commissure as large as a quarter of a dollar, and an enlarged inguinal gland upon the left side. Two years after the operation the patient was still well. 4. The patient was forty-eight years of age. The operation was performed June 12th, 1878. On the left labium minus was a tumor extending to the clitoris, which was excised. April 1st, 1879, a second operation was required on account of the appearance of a growth as large as a walnut in the left labium majus, and a superficial infiltration in the left inguinal region. All the infected tissues were removed with the galvano-caustic knife. The patient died a year and a half later from a recurrence of the disease. 5. The patient was thirty-seven years of age, and was operated upon Dec. 7th, 1881. The tumor had existed about seven months, was pediculated, about the size of a small apple, and was located at the posterior commissure. The inguinal glands were enlarged on both sides. As yet there has been no recurrence of the disease. [All information concerning carcinoma is useful, particularly if it be not of so gloomy and one-sided a nature as is usually met with. Billroth has said that if a cancer fails to recur within a year from the time of operation, one may have reasonable hopes that it has been extirpated; in two years one can feel quite certain of a cure; in three years, almost positive. Bearing in mind the local origin of the disease, this form of it offers peculiarly good opportunities for radical treatment.] AND. F. CURRIER.

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## ITEMS.

1. THE attendance at the NEW YORK POLYCLINIC, both of practitioners and patients, during the first course of six weeks, just concluded, has been such as to assure the future of the institution beyond all question. For this course, 59 practitioners took tickets (27 of whom were in the gynecological department), and during this time, 1,089 new patients were treated in the dispensary. The institution has thus put itself at once on a more than self-sustaining basis.

2. IN the abstracts of the articles by DRs. TALIAFERRO and NOBLE, which appeared on p. 379 of the December SUPPLEMENT, the residence of these gentlemen was inadvertently given as Augusta, Ga., instead of *Atlanta*. Further, Dr. Noble's initials should have been G. H., instead of E. H., and on top of page

380, it should read *secure the ends with buckles or pins, but do not tie them*, instead of "secure the ends with buckles, or tie them."

3. THE conclusions arrived at by DR. P. J. MURPHY, in his article in this number on "The Effects of Trachelorrhaphy on Fertility and Parturition," viz., that this operation very generally entails sterility, will doubtless be widely disputed and, we trust, disproved. Our own experience, as well as that of several members of the New York Obstetrical Society, expressed at a meeting some two years ago, and again in the session of October 3d, 1882, reported in this number, is entirely at variance with the opinion of Dr. Murphy, and we hope that his article will elicit further communications on the subject.

4. DR. O. STROINSKI, of Chicago, has recently performed a very ingenious and, so far as we know, entirely NOVEL OPERATION FOR TRAUMATIC RUPTURE OF THE BLADDER (*Chicago Med. Journ.*, Nov., 1882). He removed a fibrous polypus of the size of a walnut by torsion with forceps from the bladder of a lady, 46 years of age, having previously dilated the urethra. An injection of tepid salt water was followed by collapse, and the water could be felt in the abdominal cavity; by pressure on the abdomen, a large quantity of this water was withdrawn by a syringe in the bladder. It was decided to suture the rent, which evidently was in the anterior wall at the site of the polypus. For this purpose the vesical mucosa near the sphincter was first inverted, and two ligatures were passed through it, by traction on which, assisted by pressure from above, the *whole* bladder was inverted through the dilated urethra. There were evidences of chronic cystitis. The rent was in the anterior wall, and two centimetres long. It was closed by three carbolized silk sutures, and the bladder replaced by a repositor. A permanent catheter was retained for two weeks, and the woman made a perfect recovery.

A curious fact is that the uterus was retroflexed, which displacement would, we should think, have rendered the inversion of the bladder still more difficult. It would be interesting to learn, by experiment on the cadaver, whether the bladder can frequently be inverted through the dilated urethra without injury to its walls, or to the peritoneal attachments. The practical utility of this knowledge is evident, as for instance, for diagnosis and treatment of chronic cystitis. How the urethra would endure such treatment remains to be seen. In DR. STROINSKI'S case, no special mention is made of this point, except to say that "she has no pain in urinating."

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

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### SYPHILITIC HEPATITIS IN CHILDREN.

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BY

HUGO ENGEL, A.M., M.D., Philadelphia,

Fellow Am. Acad. of Medicine; late Professor of Practice of Medicine at the Med. Chir.  
College, etc., etc.

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JANUARY 15th, my friend, Dr. Jos. H. Lopez, asked me to see with him, in consultation, a ten-year-old girl suffering from abdominal enlargement and dyspepsia. The history of the case was as follows:

Both parents living and apparently in good health. The girl had been remarkably free from the common diseases of childhood, and seemed to enjoy better than average health till about one year ago. She then commenced ailing, without being actually sick. Her appetite failed, she lost flesh, had sour eructations; her bowels moved sluggishly, and a general lassitude overcame her. She was treated for worms, scrofula, and dyspepsia; tried a change of climate and a sea-voyage; was kept from school and placed upon all kinds of diet, but all to no good. The abdomen began to swell and enlarged daily more and more, her strength totally broke down at last, and she could not leave her bed any more. It was then that I saw her. The girl had a cachectic appearance; her face was wrinkled; the eyes wore a dull, listless expression; the skin had a peculiar dirty-yellowish hue; she was decidedly emaciated, and looked, as far as her face was concerned, prematurely old; she had that *facies senilis* which we meet so often in infants suffering from hereditary lues, or laboring under some other form of marasmus. A careful examination revealed the following: She had Hutchinson's teeth; her tongue was pale, flabby, and covered by a whitish coat, and was indented by the teeth. The organs of the chest were normal. The abdomen was greatly enlarged by serous effusion—ascites; the fulness of the superficial abdominal veins denoted a disturbance in the portal circulation; the great amount of the effusion, and the tympanites



above, prevented percussion of the liver; at least, it was impossible to define the size of the organ.

Remembering that ascites is rare in children, and that, if it happens, it is generally caused by tubercular peritonitis or by cancer of one of the abdominal viscera, I made, more by exclusion than by anything else, and by reflecting on the want of success of every kind of treatment tried so far, the general diagnosis of retarded hereditary syphilis, and the special diagnosis of syphilitic hepatitis. If success of treatment can verify a diagnosis, then mine was correct in this case. Paracentesis was performed, the effusion and the tympanites seriously threatening a fatal interference with the action of the heart, and nearly a gallon of a slightly opaque, yellowish fluid, containing a considerable amount of albumen, was slowly withdrawn. Mercurial inunctions into the abdominal walls and gradually increasing doses of iodide of potassium internally formed the treatment, and I had the gratification of seeing the child in very good health by the 10th of April, a little over two months after the beginning of these therapeutic measures.

Immediately after the performance of paracentesis, the liver was found to extend as far down as within half an inch of the *crista ilei*; the organ was soft, slightly tender, and its margin smooth and even. The spleen was moderately enlarged. The fluid never accumulated again. The child was afterwards placed upon a tonic treatment, and, when discharged, the liver still extended three fingers' breadth below the ribs. Several months later, July 2d, I visited the child once more; she seemed in excellent health, and there was no trace left of her former illness. The liver had assumed its normal size, and so had the spleen. The urine had always been free of albumen, but, for a short time, had contained some of the coloring matter of the bile.

In the year 1872, I had a very similar case under my charge, also a girl, but only seven years old. The teeth here showed no peculiarity, and I was long at a loss regarding the diagnosis. None of the usual remedies seemed to influence the ascites till I thought of using mercurial inunctions and, internally, iodide of potash, with no intention of employing antisiphilitic remedies, but simply with the view of stimulating absorption. But the rapid improvement following, the change in the color of the skin which, in this case, also exhibited a peculiar cachectic appearance, and suggested first to me the possibility of a cancer, and especially the rapid diminution in the amount of the effusion, induced me to make the treatment a more systematic one, and to push the iodide, which I did with the happiest result: the child—now a young lady in perfect health—totally recovering.

While a student, under Virchow, I had the opportunity of examining the liver of a person having died a violent death while suffering from constitutional lues. The man, who never had been drinking anything stronger than beer,<sup>1</sup> and this even mod-

<sup>1</sup> Beer alone has never been known to cause cirrhosis.

erately, had had ascites. The liver was found to be in a state of chronic inflammation, and a great deal of fibrinous exudation, the product of inflammation, was noted. The surface of the liver at several places was sunk in, as if drawn inwards,<sup>1</sup> and the peritoneal covering was thickened, and here and there fibrinous.

The lesion is a morbid process, very similar to the chronic inflammation in cirrhosis due to alcohol, and may be called a more or less circumscribed hypertrophic cirrhosis. In consequence of the fibrinous exudation, the liver enlarges,<sup>2</sup> but, while this takes place uniformly all over the organ, the real cirrhotic process does not ensue as uniformly as in the alcoholic form, but only here and there, so that the liver in advanced cases of circumscribed syphilitic hypertrophic cirrhosis (or hepatitis syphilitica) assumes a somewhat irregular outline, and might easily be mistaken for cancer, if it were not for the want of *points douloureux*, the smooth margin, and the early and great ascites.

From common cirrhosis, the luetic form can be distinguished, post mortem, by the hob-nail appearance of the former, while in the latter the irregular outline is caused by large patches sunk in, as it were, and by the irregularity in the shape not affecting the margin which remains smooth. Further, in the alcoholic form of cirrhosis, the irregular outline makes its appearance simultaneously with the diminution in the size of the organ, while in the syphilitic variety the liver, as a whole, is still very much enlarged when the local cirrhotic process has caused already deep fossæ in the shape of the gland. The mucous membrane of the stomach is also in the state of chronic inflammation, which alone would explain the accompanying dyspeptic symptoms.

The diagnosis in an adult can present no difficulty, as there are generally other symptoms and signs besides the history of the case. But in children it is altogether different. There we generally have no history of syphilis, even if the child had some manifestations in very early infancy—as a few copper-colored spots, other syphilides, or snuffles—they are usually not remembered, having been mostly cured within a few days either by the accidental or intentional administration of calomel.

<sup>1</sup> Handb. der spec. Pathologie und Therapie v. Rud. Virchow, vol. ii., p. 577.

<sup>2</sup> Gubler and Dittrich, Prager Vierteljschr., 1849, i., 502.

In the cases I saw, and in those I read,<sup>1</sup> there was uniformly an absence of any history of syphilis. That neither of the parents, whoever may be at fault, will voluntarily intrude his or her history of shame upon the physician, is too clear to need comment. Certainly, if any marks or cicatrices are left from former syphilides, or if the bridge of the nose has lost its bony support, they would be important auxiliaries in the diagnosis.

Regarding the peculiar appearance of the teeth, which Hutchinson considers signs of hereditary syphilis, we must be permitted to doubt their diagnostic value, as we have seen children, undoubtedly the victims of the sins of their parents, without these teeth; and again other children, with positively no syphilitic history, with Hutchinson's incisors. In doubtful cases these teeth may, however, be of some value. What I consider the essential points in the diagnosis of syphilitic hepatitis in children are the following:

1. A history of the case like this: The child having been for a longer time occasionally unwell without this being attributable to any special known ailment.

2. The peculiar color of the skin and the somewhat cachectic appearance of the child, which otherwise seems to be in good health.

3. Ascites with the following peculiarities:

- (a) Its gradual development and the absence of any of the usual causes; no tubercular peritonitis, no cancer, etc.

- (b) Absence of pain; almost no tenderness, and no hemorrhage from either nose, stomach, or intestines.

- (c) After paracentesis, liver very much enlarged, smooth margin, and hypertrophied spleen.

4. The accompanying dyspepsia, but utter absence of any other symptoms.

5. The success of the antisymphilitic treatment which, while it may also do good in other cases, would never be so rapidly successful, and not go hand in hand with such apparent improvement of the general health of the child (nutrition, appetite, digestion, color of skin, etc.).

6. The peculiar fact that all cases of diffused hepatitis due to hereditary syphilis, so far reported, happened in girls.

<sup>1</sup> Dr. Seiler, Berl. Klin. Wochensch., xviii., p. 365, 1881.



As regards the treatment, the following has been very successful in the few cases which came under my charge. In children from five to twelve years of age, I have five to twenty-five grains of mercurial ointment, to which a small quantity of unguent. petrolei has been added, rubbed daily into the abdominal walls. Care must be taken to have it well worked into the skin. Before a new application is made, the skin is cleansed with soap and water. The inunctions are continued either till the ascites has disappeared or till, in case paracentesis has been necessary, I am convinced that no further accumulation of serum takes place. Should salivation ensue, I would interrupt the treatment for the time being; but children can absorb a large quantity of mercury ere this symptom makes its appearance. The person who applies the salve has to be cautioned not to neglect washing his hands with soap and water after each inunction; but the use of a gutta-percha glove is to be preferred.

Internally, I administer iodide of potassium in the dose of from two to forty and sixty grains, three times daily, simply dissolved in water with the addition of some syrup, which I change with each renewal of the prescription. The dose of the iodide is increased every third day, and this is continued until every trace of the malady has disappeared. I then place the patient on the ferrated elixir of cinchona until I am satisfied that the general health of the child is in as good a condition as possible. As a precautionary measure, I advise the parents to give the child, every spring and autumn, moderate doses of the iodide for a period of three weeks, and give them to understand that it would be the safest to continue this for a number of years.

It is hardly necessary to speak of the importance of the early recognition of the malady. We are well aware how difficult it is to induce absorption if once, after a fibrous exudation of inflammatory origin of any kind, contraction has begun. The earlier, therefore, syphilitic hepatitis is recognized, the greater will be the success of the treatment. In connection with this, we advise in doubtful cases to have immediate recourse to the antisymphilitic treatment which, in such cases, almost never can do any harm, while it may achieve a great deal of good.

## THE SYMPTOMS AND DIAGNOSIS OF MALARIA IN CHILDREN.

BY

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THE peculiar manifestations of malaria in children is a field of observation which has been much neglected. This is especially true of this country, where the opportunities for its study are so much more extensive than have been enjoyed by either English, French, or German writers. Many of our foreign text-books on diseases of children do not even allude to malaria. Of our American authors, most have contented themselves with a brief description of a remittent and an intermittent variety, divided into stages like the classical cases in adults. The organism of the child is peculiarly susceptible to all acute infectious diseases, and malaria forms no exception to the rule. Thus, it has been often observed in epidemics that young children are the first who are affected. The poison acts not only more rapidly, but more generally and more profoundly in these cases than in adults. Again, the susceptibility of the nervous, digestive, and respiratory systems produces such variations in the form and type of the disease as to mislead, at times, even those most careful in diagnosis. Often, symptoms referable to one of these organs may overshadow completely the real disease, and give an entirely new clinical picture. The attacks are so incomplete and so fragmentary, that even death may follow, in the masked forms, before the diagnosis can be made. Another reason for obscurity in the diagnosis is the fact that the symptoms often come on insidiously, and that even the family doctor is not called until it has made some progress.

The closest observation on the part of both physician and attendants is often required, in order to establish the fact of periodicity in the symptoms, or the existence of a cold or sweating stage. Occurring at the time of dentition, its symptoms are often referred to that source; in winter, to diseases of the lungs or bronchi; and, in summer, to gastro-intestinal disorders. My own experience abundantly confirms the state-

ment made by Schmiedler, that there is scarcely any disease so changeable, so obscure, and so indefinite as intermittent fever in children.

Fortunately for both the physician and the patient, when once the diagnosis of malaria is established, prognosis and treatment usually present no difficulties.

I shall, therefore, in this paper, confine myself to symptomatology and diagnosis, as the etiology, pathology, and treatment of malaria in children do not differ materially from the same in adults; and this subject has been already pretty thoroughly investigated.

I have no theories to establish, but will simply give my experience as drawn from a study of 184 cases, whose histories have been pretty carefully recorded. Nearly all of them have been observed at my clinic at the North-Western Dispensary, which draws its cases mainly from the district west of Ninth avenue, between Eighteenth and Fifty-fifth streets—a district which I believe to be acknowledged to be the most malarial in New York. As far up as Forty-second street it consists of made ground for a distance of from one to two blocks from the river. Above this point, the district covers what was once a large pond and several small streams which have been filled up.

In regard to *sex*, there seems to be very little predisposition shown. Of my cases, ninety were males and ninety-four females. Six patients were under one year old. Of these, only one was under six months. Between one and four years there were forty-five cases; between four and seven years, fifty-four; between seven and nine years, thirty-seven; over nine years, forty-eight. The greatest predisposition, according to these cases, would seem to be between the ages of four and nine years. Bohn, from 465 cases, found it greatest between two and seven years, and most of all between two and three years. The discrepancy is to be explained by the fact that his cases are taken largely from hospital and private practice, while those children who are brought to dispensaries are of an older class. He saw twenty-one cases under one year of age, seven of these being under six months.<sup>1</sup> He calls attention to

<sup>1</sup> Any one interested in the subject of malaria in intrauterine life, will find a *résumé* of the reported cases in Bohn's article, in Gerhardt's *Handbuch der Kinderkrankheiten*.



the fact that one-third of the cases under one year were of the irregular or masked type.

The *invasion* of malaria is frequently much more gradual in children than in adults. In 117 cases in which I have recorded the manner of invasion, it was abrupt in forty-five and gradual in seventy-two. In the abrupt cases, the symptoms noted have been convulsions, vomiting, drowsiness and prostration, fever, severe pains in the head and in the epigastrium, less frequently over the liver or spleen, splenic enlargement and often tenderness, occasionally also hepatic tenderness.

The following case will serve as an illustration of the usual course.

CASE I.—Wm. M., aged sixteen mos., was brought to the Dispensary Nov. 10th. He was reported to have been as well as usual until the afternoon before, when he became very drowsy and heavy, and developed a high fever, which lasted all night. During the night he was thirsty and restless, often crying out. The fever remitted this morning, but without perspiration. It returned again this afternoon with all the symptoms of the previous day. The bowels are constipated, and the child has no appetite. Rectal temperature is found to be  $103\frac{1}{4}^{\circ}$ . The spleen is enlarged, and seems to be tender on pressure. The tongue is heavily coated. The child was put upon cinchonidia in doses of gr. v. The fever continued, the mother reported, until about midnight, when it subsided as before without a sweat. On the following morning the temperature was  $100\frac{1}{2}^{\circ}$ . The medicine was continued, and no further paroxysms of fever occurred.

In cases with a gradual invasion, I have noted anemia; frontal headache; constipated bowels, or diarrhea, more frequently the former; complete anorexia; muscular weakness, tiring on slight exertion; face pale or of icterode hue, with dark rings around the eyes; nausea, with occasional vomiting; a tongue heavily furred, usually of a dirty brownish color; epigastric pains, and often tenderness; drowsiness by day, restlessness at night; slight cough; hot and chilly by spells. In many cases, these symptoms recur rhythmically every day or every other day, but very often they occur without any periodicity. The spleen, in the great majority of cases, but not in all, will be found to be enlarged.

The following case shows very well a not infrequent type of the disease, and illustrates how quickly relapses occur when the

medicine is not continued for some little time after the fever is controlled, and when the patient remains in the malarial district :

CASE II.—Julia M., aged six years, was first seen August 21st. She was reported to have been well up to one week before, since which time she had been drowsy and heavy; had vomited occasionally, and several times had been noticed to have fever, especially in the afternoon, but not coming regularly. When this came on, she always complained of great pains at the epigastrium. She had had two previous attacks of a similar nature, and in both she complained of severe pains in the stomach. Had had no chill; bowels reported regular. She had vomited occasionally, and complained of headache. She is now worse about noon. The temperature was 100°, and the tongue heavily coated. Cinchonidia ordered. She returned four days later, having taken only gr. x. of the medicine, and with no improvement. Bowels now constipated. Ordered cinchonidia in full doses, and a cathartic. She was not seen again for six weeks, as she got relief in a few days after taking the medicine. She was then brought back for a relapse of one week's standing, with the former symptoms, but more severe in type, the temperature being about 103°. The bowels were constipated. Cinchonidia again controlled the fever. She subsequently had two paroxysms with a seven-day interval. The medicine was, however, kept up, and no more fever occurred while she was under observation—a period of three weeks. The spleen was much enlarged, and epigastric pains and tenderness were prominent symptoms throughout the whole course of the disease. Sweating and chills were noticed only with the later paroxysms.

The next case shows how insidious, at times, the invasion may be, and how the cumulative effects of the poison were finally manifested in distinct and unmistakable paroxysms. The case was to me a very instructive one, so I will report it in full.

CASE III.—Annie T., aged five years, came home from the country about September 1st in splendid condition. She was plump and hearty, with an excellent appetite, and a picture, in fact, of perfect health. In about a month, she began to lose appetite and flesh, and the school-teacher sent a note to the mother stating that the child must be sick, as she wanted to sleep so much during the day, and was noticed to sweat profusely. The drowsiness began soon after the school commenced in the morning. The mother whipped the child, and sent her back to school. She began to complain much of her head being hot, soon after this. At night, she was restless, and often perspired. When these symptoms had lasted about two weeks, she

was taken with a diarrhea, the passages soon changed to a dysenteric character, and were accompanied by much tenesmus and griping. These symptoms were severe by day, but absent entirely at night. Squibb's diarrhea mixture was administered, and the child ordered to be kept in bed. This gave considerable relief, but did not wholly check the bowels. Vomiting was soon added, and for two days was persistent in spite of treatment. The passages again became more frequent, occurring every few minutes during the day, and very often at night. A slight febrile movement accompanied the diarrhea. Treatment directed to the bowels reduced the number of passages to four or five a day, but the child's general condition was growing steadily worse. She now began to complain much of epigastric pains, and still had her spells of drowsiness.

She gradually failed, until November 12th, when she was seized with a severe chill at about 3 p.m. It was so severe as to make her teeth chatter. High fever followed, lasting until the night, when she was found in a profuse sweat, so as to necessitate her clothes being changed. The question of diagnosis seemed now to be settled definitely. Dextro-quinine, cinchonidia, pills and suppositories of quinine were all tried in succession. These she either refused to take, or immediately vomited or expelled, so that very little effect was obtained. I saw and examined the child for the first time on November 18th, having treated her until then according to the mother's account of the symptoms. The spleen was neither enlarged nor tender. There was some epigastric tenderness; the tongue was heavily furred, and of a yellowish-brown color, and the child was pale and anemic. The temperature was normal. That same afternoon, six days after the first, she had a second severe chill, followed by fever and sweat; the paroxysm being milder than the preceding one. Fowler's solution was now begun, ℥ v. t. i. d.

Dec. 2d. The child has taken the arsenic until two days ago, when she was so well the mother took the responsibility of stopping it. She has regained her appetite, the bowels are regular, she is lively, and complains of nothing whatever. She has had no repetition of the chill, and no fever has been noticed for a long time. She is ordered to continue the arsenic in ℥ iij. doses t. i. d.

Another child in the same family, and still another in the same house had, meanwhile, come under observation with well-marked symptoms of malarial poisoning.

In 106 cases in which the *hour of the invasion*, or the exacerbation, was noted, it took place in the forenoon in thirty-five cases, and in the afternoon or evening, in seventy-one; a proportion of one to two. It differs thus from the disease in adults, where the order is reversed. Bohn found, likewise, a great preponderance of cases in which the paroxysm came in the afternoon.



The division of the diseases into stages, as in adults, I think might be advantageously dropped altogether. Those who look, in children, for the regular succession of chill, fever, and sweat to establish the diagnosis, will be led astray in the vast majority of cases.

In 150 cases, I have noted the *chill* being present in nineteen and in only about one-half of these was it at all pronounced, these being in almost every instance over eight years of age. In fifteen other cases, chilly sensations, coldness of hands or feet, etc., were observed, making thus only thirty-four in which anything resembling a cold stage was present, or a little more than one in five. I admit that statistics taken from private or hospital practice, where children are more closely observed, might show a somewhat larger proportion than I have indicated.

*Fever* is one of the most important and undoubtedly the most constant of all the symptoms. Very few cases occur which, on close observation, do not show some rise in temperature by the thermometer at some period during the twenty-four hours. We have all shades and variations, as in adults. As regards the course of the fever, and this of necessity must be studied while the patient is not under the influence of quinine, my cases seem to fall into one of three groups, viz.: First, those in which the temperature rises quite high at the outset, and remains so with very little variation for twenty-four, forty-eight, or even seventy-two hours, when a marked remission occurs, and the fever thereafter assumes a distinctly remittent type.

Secondly, those in which the fever is at first slight, and only noticed at some particular part of the day, usually towards evening or at night, but gradually increases in its intensity and loses its periodic character until it may become a continuous fever, usually with slight daily remissions, not going above  $103^{\circ}$  at any time.

Thirdly, those in which the fever assumes a distinct type from the outset, remittent or intermittent, and recurs regularly until controlled by the quinine.

The last is the rarest form.

Out of one hundred and fifty cases, I have found the quotidian, in the proportion to the tertian, of five to one, and not a

single instance of the quartan type. In nearly one-third of the cases, no distinct type could be said to exist.

My own opinion is, that the general impression regarding the temperature is too high. I must admit that I myself was somewhat surprised to find, on analyzing my cases with reference to this point, that in only twenty-six, or about one-seventh of the whole number, was the temperature before the use of quinine above  $104^{\circ}$ . In only three cases did I see it above  $106^{\circ}$ . The highest recorded was  $106\frac{3}{4}^{\circ}$ . This occurred in an infant of ten months, and fell the next day to  $101\frac{2}{3}^{\circ}$ . The usual range of temperature has been from  $101^{\circ}$  to  $103\frac{1}{2}^{\circ}$ .

*Sweating* was noted in a little more than one-fourth the cases. It is thus more frequent than the cold stage. It comes later, and is very much less marked than in adults. It is stated to have been profuse in seven cases.

*Cerebral symptoms* of some form or other can be said to be the rule. They are noted to have been present in ninety-seven out of one hundred and fifty cases; they are noted absent in only four of my cases. Pain in the head is the most frequent. Of my ninety-seven cases, this was present in sixty-two. It has been almost invariably frontal in children old enough to describe their sensations. It has been seen quite as often in the chronic as in the acute cases. I have no doubt in my own mind that some of these were cases of supraorbital neuralgia; but in children under eight years of age, the differential diagnosis is extremely difficult.

The next most common head symptom is drowsiness or, as it is sometimes described, dullness, heaviness, or apathy. In certain cases it may amount to stupor even. In several cases children have been sent home from school because of this disposition to sleep during the day. This is usually noticed to come at some particular part of the day, and to be accompanied by fever; or it may mark the time of the paroxysm when febrile movement is altogether absent. It is always a significant symptom.

Convulsions have been recorded in four cases. In two cases the convulsion was not repeated, and occurred at the onset of the disease. One patient was a boy of eleven months, and another a boy of four years. Another case was in a girl

of twenty-one months, in which three convulsions took place on the same day, within a few hours of each other.

The fourth case, which I propose to report, presents so many points of interest that I will detail it in full. It illustrates what the natural course of the disease may be when uninfluenced by medicine.

CASE IV.—Daniel K., aged four months, was first seen October 4th. The mother was a very intelligent woman, and gave the following history:

The child had not been well for over a week, had a short cough, seemed to be losing flesh, and was not nursing as well as formerly. Four days before, about midnight, he was taken with a general convulsion, which was repeated twice that night. This was followed by fever, which lasted all the next day. The following night the convulsions were repeated early in the evening. On the third day they recurred in the afternoon. During the interval the child had been drowsy and sleepy, especially in the morning; later in the day he was very cross and restless. There had been no vomiting, and the bowels were regular until a dose of castor oil was given, which was followed by five or six evacuations. There had been more or less fever all the time. The cough had continued.

On examination he was found to be a well-nourished child, quite drowsy, and had a disposition to hold the head back. The extremities were quite cold, while the body was hot, the temperature being 105°. The respirations were eighty per minute. Physical examination revealed rude respiration over both lungs and a few fine râles, but no bronchial breathing anywhere. The diagnosis was obscure, but was thought to lie between pneumonia, meningitis, and malaria. The latter was recorded as the most probable, and treatment by cinchonidia begun.

The next morning, the temperature had fallen to 102° and the respirations to sixty, notwithstanding the fact that he had vomited every dose of the medicine. He seemed much brighter than on the day before, and the general prostration was decidedly less. The cough was loose, and the pulmonary signs much less marked. Powers & Weightman's "cinchonia alkaloid" was ordered, gr. v. q. 3 h.

The child was not brought back to the dispensary, and on November 15th I visited the house to learn the result of the case. The child was plump and hearty-looking, showing no evidence of present or previous disease. The mother said the fever had continued for about ten days after I saw the case, but it assumed after a little a tertian type, coming regularly every other day, so that the father had said "it must be the chills." The medicine I ordered was kept up only about a couple of days, and after that the child took no medicine except a little lime-water for his vomiting. The fever gradually wore off, appetite



returned, and the child rapidly regained his flesh. He had been, when I saw him, perfectly well for nearly four weeks. The family lived on the first floor of a house situated half a block from the North River.

All of the cases in which convulsions occurred terminated favorably, and only one was especially severe.

Vertigo, so characteristic a symptom in the adult, seldom occurs in children. I have only noted its presence in three cases.

(To be continued.)

## ABSTRACTS.

**1. Martin: Biedert's Cream-Mixture** (*Jahrbeh. f. Kindhilkde.*, XVIII., 2 and 3).—The interest in methods of artificial nourishment for children always continues, and Dr. Martin has made such careful experiments with this preparation that his conclusions deserve consideration. He says that Biedert's cream-mixture is the most *useful* of all surrogates, that is, it will be borne in the greatest number of difficult cases. It will agree well in all cases and—within certain limits—in all ages, in healthy as well as in sick children, and especially is it the food to give to the sickest children and the most delicate digestive organs. It is too dear, but not much more so than other artificial foods, and not so much so as a wet nurse, while it is so good that a mother, who from any reason cannot nurse her own child, can feel that she is giving it even a better chance with this than with a wet nurse. Even for the poor, its use for a short time is often of so great benefit for the sick and wasting child, that in the end it is the cheapest thing to use. Of course, it can never take the place of good cow's milk for general use, but when this does not agree with a child, or when there is the slightest question as to its quality, there is nothing equal to the cream. (During the hot weather some very striking examples of the efficiency of the cream diet have come to my notice.)

J. F., JR.

**2. Weinlechner (Vienna): Subcutaneous Cranial Fissures, Cranial Openings with Adherent Cerebrum and False Meningocele** (*Jahrbuch f. Kindhilkde.*, XVIII., 4).—Intrauterine cranial fissures and fractures are extremely rare. Those occurring during delivery and occasioned by forceps or narrow pelvic straits are more frequent, while in a certain number of cases subcutaneous fissures are caused post-partum by various traumatic causes. Here belong the falls upon the head in rapid or "street" births, and, later on, blows of all sorts on the cranium. Such accidents may lead to two different forms of disease:—(1) Extension of the fissure to a cranial opening with apposition of the brain; or (2) false meningocele, the fissure here also widening. The professor details thirteen cases, partly from his own experience, partly from museum specimens, and partly from the literature.

The cases show clearly that large cranial openings may develop from even slight subcutaneous fissures occurring traumatically in infancy. It is probable that most cases reported as congenital are really caused in this way. In twelve of the thirteen cases the trouble could be traced to trauma. Thus, there were:

- (1) Fall on the head.
- (2) Fall on a footstool, and loss of consciousness.
- (3) Fall from arm to ground, followed by vomiting.
- (5) Found at the autopsy:—several fissures with the remnants of a hemorrhage.
- (6) Ditto.
- (7) Fall on the head.
- (8) Forceps delivery—at autopsy, extensive pigmented fibrinous deposit.
- (9) (10) (11) (13) Fall on the head.
- (12) Blow on head by a windmill.

No trauma could be demonstrated either by the history or the autopsy in case (4).

Two different clinical conditions were found, sometimes combined with one another.

A. An opening in the bone, generally irregular, in form of a weaver's shuttle or an egg, and usually in the parietal bones. There may be extensions from this to neighboring sutures. The edges, and often the whole parietal bone, are bulged outward like a crater. The brain presses against the coverings of the opening, pulsates clearly, but does not project much. It cannot, therefore, be called cerebral hernia. Seven of the thirteen cases belonged to this class.

B. There is a soft, fluctuating, sometimes transparent tumor, which becomes smaller on pressure, pulsates more or less, but never so clearly as in the first class of cases. The edges of the opening are clearly felt only after the fluid (cerebro-spinal) is removed. The opening is only partially closed by the dura, which is closely adherent to the edges, but which has numerous openings communicating with the subdural or sub-pial space. The inner wall of the cyst is not formed of dura, but of connective tissue; hence, it is to be considered a secondary cyst, or *false meningocele*, having the contents of a true meningocele, but not the walls. They are larger than those of the first class of cases, sometimes reaching the size of two fists. They have a constant growth; while in the first class of cases there comes, after a time, a pause.

C. A combination of both forms. This was seen in case (5), which is an unicum.

The professor devotes some space to the manner in which these two forms may arise from a fissure. In both the motive power is the pressure of the cerebrum. In both the dura is probably torn, but in Class A the dura, with the perhaps injured brain, are pressed against the fissure, and become firmly adherent, and then the whole bone is arched outward; while in the B class some fluid escapes through the torn dura, and the pressure is thus partially exerted on the walls of the cyst. All the cases reported occurred at a very early period of life.

The *prognosis* is different in the two classes. The first class reaches a point where the enlargement ceases. There is, however, always the danger of injury from without to the so slightly protected brain. The

meningoceles, on the other hand, continue to grow. What size they might reach cannot be stated, because in the cases reported death has occurred from meningitis following puncture. The largest tumor on record reached the size of two men's fists at the age of two and one-half years. If they are not punctured, spontaneous rupture is apt to occur. The largest fissure on record (Bardak's case) measured 9 by 6 cm. in the twenty-eighth year. The principal growth takes place in the early years, but even after the bones are firm, the fissure may increase by resorption of the bone. This process is, of course, slow, but in one case amounted to an increase of 2 cm.

*Treatment.*—In the first class of cases we can do nothing except to protect the brain by a well-fitting plate. Attempts at pressure exercised on the whole cranium have proved failures, and puncture is dangerous. In the second class, puncture is not very dangerous, even if repeated, but the sac rapidly refills. The best treatment is, perhaps, to puncture, and then, under the same precautions as in spina bifida, to inject iodine. This is, however, much more dangerous than simple puncture.

J. F., JR.

**3. Marcus: Perforation of the Intestine by Round Worms** (*Deutsch. Arch. f. Klin. Med.*, 29 B.).—DR. E. MARCUS reports the case of a thirteen-and-a-half-year girl, intellectually badly developed, an onanist, who sickened suddenly, with symptoms of vomiting and pain in the abdomen of such violent nature that she became mad, and could not be examined. On the next day, there was well-marked, diffuse peritonitis, and six days later she died. At the autopsy, besides the diffuse purulent peritonitis, there were found (still living) in the pars descendens of the duodenum, three large round worms. On the inner side of the intestine was a perforation 6 mm. long, the bloodless edges of which lay quite close upon one another. In the duodenum were four more worms. The deceased Prof. Perl's declared this case to be one of ascarido-phagic perforation, the existence of which he had previously doubted. Leuckart, in his time, acknowledged without hesitation the possibility of such intestinal perforation, and veterinary surgeons have made observations of cases which cannot be disputed.

J. F., JR.

**4. Hadden: Congenital Cardiac Disease** (*Lancet*, April 15th, 1882).—The specimen presented to the London Pathological Society, by Dr. W. B. Hadden, was obtained from a female child, aged four months. The cardiac trouble was not suspected during life, the rational symptoms and physical signs being referred to the lungs, which were diseased. On making the post mortem, the heart was found greatly hypertrophied and weighed four ounces; the average weight at the patient's age being rather less than one ounce. The septum between the ventricles was imperfect above, and admitted the middle finger easily. The right ventricle was much hypertrophied, a quarter of an inch thick in some parts; cavity dilated, at right apex the wall measured half an inch transversely; the muscoli papillares much hypertrophied. The foramen ovale and ductus arteriosus, although allowing the introduction of a small probe, were practically closed. The pulmonary artery was large, the aorta inversely small.

J. F., JR.



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ORIGINAL COMMUNICATIONS.

DILATATION OF THE UTERUS AND INTRAUTERINE  
THERAPEUTICS.

BY

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THE general surgical tendency of recent years forces gynecologists, likewise, to employ "uterine surgery" more and more in place of medicinal gynecology. Since the time of Marion Sims, almost every diagnostic or therapeutic innovation in gynecology is a new surgical manipulation. Thus the necessity has gradually become more urgent to treat quite a number of uterine diseases from the internal surface of the cavity of the uterus. There is not the slightest doubt that, in affections of the mucous membrane, the mucosa itself must be attacked by appropriate measures. But even in parenchymatous affections of the uterus, the internal surface of that organ might form a basis for applications at least as suitable as the vaginal portion. For instance, if we wish to abstract blood from the hyperemic uterus, the internal surface of the uterus is anatomico-therapeutically more appropriate therefor than the vaginal portion, provided that such treatment is not fraught with other dangers. Or else, if we wish to excite absorptive processes in and about the uterus by applications of iodine, paint-

ing of the interior of the uterus with iodine from the fundus to the cervix, is certainly more effective than an application confined to the external surface of the vaginal portion.

For all these purposes the cervical canal must be patulous or be dilated. For more than twenty years, a large number of gynecologists have attempted to solve this problem. But these years and the manifold endeavors did not suffice for the development of a method satisfactory to every one. Nearly every gynecologist has peculiar views according to which he acts and experiments. As in the beginning of the century every obstetrical teacher thought himself bound to construct his own forceps, so almost every gynecologist nowadays has his own method of intrauterine applications.

The main fault seems to me to lie in this, that the dilatation of the uterus and the intrauterine application have been considered as a task *per se*; while the point of departure should rather be from the affections of the uterus, and the appropriate procedure for every one be sought separately. P. F. Mundé alone, in his excellent book, "A Treatise on Minor Surgical Gynecology," p. 261, has kept the several methods epicritically apart, according to their therapeutical bearings. The object of the following lines shall be, in a manner the reverse of the ordinary, not to start from the methods of dilatation, but to divide the uterine affections into groups, and to describe the therapeutic procedure together with the eventually necessary dilatation of the uterus.

I shall endeavor to be as brief as possible; for, speaking to American gynecologists, I may assume a great deal as well known.

I. *Nulliparous uterus; hypersecretion of the mucous membrane; profuse glairy non-purulent discharge; sterility; dysmenorrhea.*

Without entering on the etiology or connection with other affections, I shall briefly draw the clinical picture of these cases. The subjects are young women whose uterus is freely movable; the motions cause no or but very slight pains. Ante-flexion is present, that is to say, a rather highly placed, somewhat thin-walled, small uterus; in an equal number of cases, however, the uterus is of normal size. In the intermenstrual period, the woman is perfectly healthy, at most there is consti-

pation and moderate dyspareunia. As soon as menstruation approaches, violent pains occur; during *one* menstruation of extreme severity, *another time* altogether absent or merely faintly indicated. During the first establishment of menstruation, from the fourteenth to the sixteenth year, the pains were absent and gradually increased. Owing to the temporary "amelioration," most respectable young women consult a physician rather late. Often the sterility is the first incentive causing them to seek medical advice. Assuredly, neither the dysmenorrhea nor the sterility can be referred to the stenosis of flexion or the absolute narrowness of the internal os. Otherwise, why was the dysmenorrhea absent *now and then*? Why did it occur so late? Why does the *blood* excite contractions and not the *mucus*? Why is an intrauterine pessary, a sound-borne without exciting pain? Why does a tent cause almost no pain? Why is not every ovum expelled immediately, if the uterus reacted so sensitively on all contents? Why does the dysmenorrhea at times disappear completely, although it had existed for years? Why do polypi often grow almost without symptoms in the uterine cavity? Why do the pains often commence before there is a trace of blood in the cavity of the uterus?

If we wish to make clear to ourselves this sterility and dysmenorrhea, we must begin by deducting about thirty per cent of cases in which inflammation around the uterus or in its parenchyma leads to sterility and dysmenorrhea. In the few uncomplicated cases, both the muciparous organs and their products may be at fault. The dilated glands do not admit of the normal repletion with blood of the mucous membrane, just as little as the abundantly retained mucus allows the physiological swelling of the mucosa during menstruation. A short time ago I saw the menstrual mucosa of a suicide. The mucous membrane was 0.75 cm. thick. In order to permit this swelling to occur, the entire uterine musculature must yield, become dilated, accommodate itself; furthermore, the mucus filling the cavity must, as it were, be pushed out of the uterus by the mucous membrane crowding after it.

Can there be any doubt, after all this, that the first and for the present the sole task to be solved by the gynecologist is, to give egress to the mucus? Not till then, does the second task



present itself, to reduce the hypersecretion to the normal quantity.

Inasmuch as the mucus can escape from the normal uterus, the first part of the task will be solved when the normal width of the uterine canal has been restored ; and inasmuch as very thin instruments suffice for the application of intrauterine remedies, the dilatation for the accomplishment of the second object is requisite only to such an extent that a catheter, a wrapped Playfair's sound, or at most a curette can be introduced. The latter instrument is hardly ever called for. What good can it do to partially destroy the mucous membrane when only the glands secrete too much mucus ? If the entire mucosa were diseased, menorrhagia would probably exist ; if the parenchyma were affected, the uterus would be demonstrably thicker, longer, sensitive to pressure ! Both conditions are usually absent in the cases at present under consideration. If we aimlessly scrape about in the uterus, the rest of the mucosa remains diseased ; the curetting would merely have the effect of a direct abstraction of blood from the inner surface of the uterus. And may we then hope that, wherever the thin mucosa has been *completely* removed, a normal reproduction takes place ? Who has not examined the uterus of an old woman ? Here the glands and almost all the epithelium are absent, a mass of granulations covers the internal surface of the uterus. Is it not probable that this condition can be provoked prematurely ; that the implantation of an ovum is now as impossible as before, when a layer of tenacious mucus prevented the ovum from entering into organic connection with the mucous membrane ? At least equally false would be a strong cauterization of the uterus. We do not wish to *destroy* the mucous membrane, but to make a *change in its function* ; not to *cauterize* it, but to *alter* it !

It is not superfluous nowadays to emphasize this. Since antiseptics permits even to the routine practitioner the local treatment of the uterus, we often hear of high-sounding statistics : somebody has curetted the uterus one hundred times ; not one patient suffered from fever, parametritis, or perimetritis ! Very good ! But why was the curetting done ? And what was the result ? The patient has not returned, and is now enumerated as cured. One cannot caution enough against such views, or

emphasize sufficiently the fact that this barren gynecological polypragmasia, this aimless "operating," is a degradation of science!

If we wish to act rationally, we must ascertain first how wide the uterine canal is. This is undoubtedly best done in Sims' lateral position. The vaginal portion is seized with tenacula, washed with carbolic acid solution, and inspected. Then we often observe the *external os* to be narrow, not so narrow that a spermatozoid could not perhaps get *in*, but too narrow for the mucus to get *out*. It has dilated the cervix. The sound or a long-handled probe-pointed small knife moves above the external os in an ampulla of from 1 to  $1\frac{1}{2}$  cm. diameter. Around the external os the margin of the os resembles a uterine hymen—membranous, thin, tense. On making an incision, 1 cm. in length, in four directions, the mucus at once wells forth, as it previously followed the withdrawal of the knob of the sound. The four small lobes retract, the os remains open. Finally the four triangular lobes may be removed with tenaculum and scissors. The best (schematic) representation of this condition will be found in P. F. Mundé's "Treatise on Minor Surgical Gynecology," etc., p. 200.

The fact that there is here no suppuration forbids, I believe, the interpretation of this condition as an inflammation.

The minor operation described may be done at the office. The hemorrhage is slight. The intra-abdominal pressure alone, which presses the cervix in the narrow vagina against the posterior vaginal wall, arrests the hemorrhage. Of course, it often *seems* violent as long as the vaginal portion, in the speculum, is freed from pressure. If we, for safety's sake, lay a tampon saturated with three-per-cent carbolic acid solution against the os, no inconvenience need be feared. Often the tampon has remained quite clean, although the hemorrhage was profuse in the speculum. Not rarely the mucus is so tenacious and adheres so firmly to the folds of the arbor vitæ that forceps must be used for withdrawing the gelatinous plug of mucus, like a soft polypus. Should it not succeed at once, we wait. On the following day the retracting cervix will press it out, by the same mechanism through which the cervix retracts over the head of a child.

For the present, the treatment is now at an end. Ordina-

rily, by the aid of irrigations, a large quantity of mucus passes for some days, the os may even contract again, and still the physiological, slight flow, serving for the moistening of the vagina, remains normal. It is even possible that sterility is cured by this procedure, because the surface, being thus freed, permits the ovum to enter into connection with the mucosa. But who would adduce favorable cases of this kind as indubitable proofs for the treatment?

Not rarely, however, fresh tenacious mucus continues to well forth from above. Having one day thoroughly cleansed the cervix, and finding after twenty-four hours again a teaspoonful or more of mucus in and around the cervix, it is evident that this mucus cannot have been secreted within twenty-four hours by the small internal surface of the cervix, but that the mucus followed from above after room had been made below. This apparent celerity is a pretty good evidence of the participation of the internal surface of the body of the uterus.

Moreover, I have not infrequently observed that the *internal os* was dilated by the retention of mucus. It was easy, without causing the least pain, to penetrate with the wrapped Playfair's sound as far as the fundus of the nulliparous uterus. I hasten to remark that the expression "the internal os was dilated" is really ill chosen. The internal os is a part of the uterus, not a sphincter in the sense of that existing at the anus, and it is evident that, in dilatation of the *entire* uterus by the retained mucus, the internal os, *i. e.*, the narrow portion of the uterus, participates in the general dilatation. It is a well-known fact that, in the presence of placental polypi, the *internal os* is found *dilated*, because the *entire uterus* is dilated. Of course, "maceration" likewise has a share in this. Hence it is not to be wondered at that the mucus, in occlusion of the narrow external orifice by a tenacious gelatinous plug, being forced back, in some degree dilates the entire uterus. Withal, the uterus need not at all be measurably elongated, but it is usually palpably thickened, somewhat globular.

It is certain that, in these cases, too, the main object of treatment is the removal of the mucus, nay more, that a change to perfectly normal conditions may occur by the mere unhindered passage of the physiological secretion. The question is only how the retained mucus is to be *completely* removed in



the first place. After a great deal of experimenting, I must pronounce the irrigations of the uterus introduced by Schultze as the best means for this purpose. But we must not imagine that all is done with *one* or *two* irrigations. Weak disinfecting solutions must be used for a week, or better, for two weeks.

As I have above explained, I believe the partial destruction of the mucus membrane, whether by curetting or by cauterizing, to be erroneous, both theoretically and practically. How many such cases I have observed in which both forcible methods proved unavailing! But as above stated, a "stubborn" malady must be treated "stubbornly." Even the theoretically best remedy, tincture of iodine, which I have used a countless number of times, occasionally does not accomplish here what the repeated irrigations do. I have always introduced tincture of iodine into the uterus in the following manner: a Playfair's sound, thinly wrapped with cotton, is dipped in the tincture and *rapidly* passed to the fundus. The uterus reacting on the irritation expresses the fluid. This is most readily demonstrated by the fact that it is much more difficult to *withdraw* the instrument than to *insert* it, and, if allowed to remain for one minute, the expressed tincture of iodine will escape from the os uteri.

However, it cannot be denied that there is a hypersecretion of the uterus in which the *internal os is narrow*. But it is readily dilatable, provided we bear in mind that the dilatation need only be slight.

One question should here be discussed: May it not be necessary, in order to interpret the case correctly, as a matter of principle to dilate the uterus in some manner sufficiently to permit the finger, the "gynecological eye," to ascertain what is in the uterus, that is to say, to palpate the organ? This question I must answer by a decided "no." In these simple cases, *the external combined palpation and sounding* suffice to instruct us as to the prevailing condition, to show that there is nothing in the uterus that can be palpated or diagnosticated. And aside from everything else, the dilatation of a nulliparous uterus to the thickness of the finger is difficult, often impossible, and by no means free from danger. Should we effect it, we would have entered on the well-known modern false course, by which we might do more harm than good.

In those cases in which the internal os is inclined to re-tract, I have simply insinuated my modification of Bozeman's catheter into the uterus, either in the dorsal position with control from without, or, what is easier, in Sims' lateral position, the uterus being grasped with tenacula. I have also repeatedly used one of Fehling's hollow glass tubes, in form of the old intrauterine stems, with drainage openings. It holds itself by aspiration and does not easily drop out. But the mucus is too tenacious to escape by the openings, so that the tube must be removed for the purpose of irrigation. By using some force, I was always able to introduce the catheter.

If irrigation of the cavity of the uterus has been continued for some time, the treatment is to be interrupted to see how menstruation will pass and whether fecundation will ensue.

But there occur also some quite simple, I shall call them uncomplicated cases of dysmenorrhea, in parous women as well as in virgins. I have repeatedly pointed out (Billroth's Handbuch : "Die Lageveränderungen des Uterus") that I do not believe these cases to be obstructive dysmenorrhea, and that I employ the old medicinal treatment with a good deal of success. However, I shall not deny that I have both temporarily and permanently cured the dysmenorrhea by a single and repeated dilatation with my dilators of the *smallest* calibre. But it is certain that most cases of dysmenorrhea are complicated; however, this is not the place nor is there room enough to discuss this question.

Since I have employed the above-described method, I have given up tents altogether, and have no cause to regret it. Laminaria and tupelo will disappear just as sponge-tents have already vanished.

II. *Parturition has occurred or not ; distinctly muco-purulent discharge; symptoms of so-called chronic metritis.*

The conviction is gradually becoming stronger within me that we are not proceeding in too one-sided a manner if we divide these cases into two groups—those referable to an untimely or timely delivery, and those having their cause in virulent infection.

But what is the meaning of the phrase : "a catarrh follows a delivery," or "after an abortion, an endocervicitis, an endometritis is observed?" Surely nothing but that *such an affection*

is a disturbance of involution. With the hyperemia, we find a hypernutrition of all formations. And whoever has but once observed under the microscope the enormous glandular development in the pregnant or the fresh puerperal vaginal portion, will certainly incline to the opinion that the frequent so-called erosions, the papillomatous, adenoid degeneration of the vaginal portion, are to be interpreted, in a large proportion of cases, as a disturbance of involution, whether the congenital disposition, *i. e.*, a plenitude of glands, has previously existed or not. Of course, the interpretation of these erosions as an anomaly of involution, in a clinical sense, does not by any means exclude the chronicity or intractability of the affection. I am well aware that "erosions" may be congenital, and be likely to appear or be present in nulliparæ. It was especially the therapeutic results which inclined me to this view. When I first warmly recommended nitric acid in Germany, after the American method, I was quite justified in doing so. The results were excellent. Often after a single cauterization the erosion disappeared, the vaginal portion underwent a marked diminution in size, and the leucorrhea ceased. What gynecologist has not observed such fortunate cases? Still we must admit that when the glandular elements extend deeply—a fact of which we may easily convince ourselves by the microscopic examination of an excised lip—a single cauterization cannot destroy the glands so thoroughly that pavement epithelium will at once proliferate over the entire spot, while the swelling of the vaginal portion will simultaneously diminish and the discharge cease. But especially when other remedies, such as pyroligneous acid, are used, we have the same effect. Recently I often apply a teaspoonful of tannin to the cleansed vaginal portion, and have no irrigations made until five or six days later. This method, too, is followed by good results. Were we to *destroy* the entire surface, cylindrical epithelium would perhaps proliferate over it still more. It is clear that the cauterizations and astringents favor involution in general, that thereby the glands are materially diminished, thus arresting the irritation of the neighboring parts, when the hyperplasia of the vaginal portion decreases, and the pathological disturbance of involution changes into the physiological involution.



Many such cases will be cured in this simple manner. When, after a single cauterization, the discharge becomes more and more glassy, this is the best proof that the secretion approaches the normal. Then the entire uterus also becomes smaller, and subsequently involutes better. For the vaginal portion is in many directions the point of attack whence we seek to influence the uterus before we penetrate directly into it.

To be sure, the simple method of office treatment must be employed before we can think of dilating. What good would it do, in the presence of actual mal-involution of the *entire uterus*, which hence includes the mucosa of the uterus, to dilate the uterus, palpate, curette, or cauterize its internal surface? In this case, too, bimanual examination conjoined with sounding is certainly capable of demonstrating whether anything pathological is in the uterus or not. Besides, how often do we find that these catarrhs of involution, in timid patients who refuse or repeatedly postpone local treatment, disappear during a course of treatment at a watering-place, or, what amounts to about the same thing, vanish spontaneously in the course of time and as a result of the generally improved state of nutrition!

I shall mention but briefly that hot irrigations and ergot are likewise of use; the latter in substance rather than all the extracts and alkaloids derived from it, because as yet we do not even know which special ingredient is the active one.

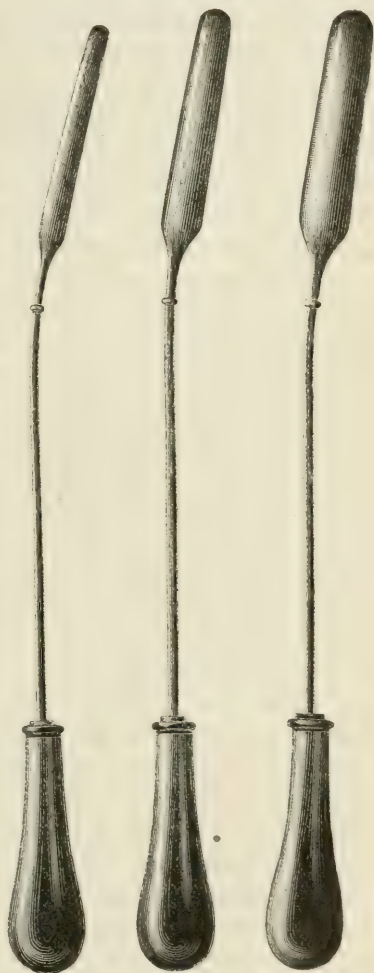
Emmet's operation may also become necessary in these cases. Although I am of opinion that the lateral lacerations hardly lead to abortion, and altogether do not cause so many dangers as is generally assumed, still I have had to perform this operation several times. I say "had to." For in vain I have often labored for a long time to cure a catarrh of the two everted lips until I closed the cervix. Here, too, there ensues a favorable influence on the whole uterus.

The hemorrhages occurring with the conditions described, I shall discuss later on.

Much more unfavorable are the cases of *virulent endometritis*. And how frequent these especially are, in women who have borne children or aborted, and in such as have remained sterile! Excepting that view of Noeggerath, that the catarrh always extends to the end of the tube, and that grave affec-

tions of the puerperium are connected with gonorrhea, I have become converted to nearly all of his deductions. I even believe that an endometritis occurs also on a *syphilitic basis*; at least I have observed some exceedingly intractable, *thin-fluid, purely purulent* catarrhs, which disappeared under general anti-syphilitic treatment, after I had vainly employed all possible methods and cauterizations, not for weeks, but for months.

In my opinion also in these cases, a dilatation is unnecessary for the treatment when the uterus is patulous enough to be irrigated and swabbed. But that degree of dilatation is usually present. When it is possible to introduce the sound, a slightly thicker uterine catheter can likewise be passed. If not, rapid dilatation should be done with my uterine dilators Nos. 1 to 3. In that event, it is also necessary to irrigate profusely previous to every treatment. Not, perhaps, on account of the subsequent cauterization—for every strong caustic *per se* is a disinfectant—but in order to free the mucosa from all deposits. I even advise to allow one to two pints of water to run slowly into the cavity of the uterus two or three times daily, so as to have the water each time thoroughly cleanse the uterus. In these cases, I have probably employed all caustics ever recommended, for there is no lack of material.



Fritsch's Dilators.

*Iodoform, too, both in the form of an ointment and in bougies, I have used without any effect.* The best results I have had with the tincture of the sesquichloride of iron and nitric acid. Spiegelberg has even cauterized the uterus with the galvano-cautery; but only once or twice, owing to the succeeding intense parametritis and prolonged illness of the patient.

What caused me to advise copious irrigations was the observation that the improvement was often most pronounced in those cases in which the uppermost layer of the mucosa was necrotic, mummified, or covered with a crust, and was expelled in the shape of a membrane like the finger of a glove. This certainly proves that the caustic had come into thorough and universal contact with the entire surface of the endometrium.

I would briefly point to the difficulty of proving the cure. On the one hand, we do not know whether the patient is cured who remains away. On the other hand, many a patient holds the gradually diminishing discharge to be too insignificant to require a call on the physician. It is not improbable, too, that a condition of pseudo-cure exists in woman as in man. And thus the cases of certain cure are reduced to a minimum. Even these cures do not bear a strict criticism, and, discouraging though it be, we often learn, after the most painstaking and protracted treatment, that the cure is based rather on the resignation of the patient than on actual improvement. If such women irrigate the vagina once or twice daily, their condition is tolerable.

In conclusion, I would ask whether in these affections a better treatment could be employed with laminaria dilatation, etc. This is certainly not the case.

III. *Present hemorrhage.* The physician explores and finds nothing. Intrauterine examination and treatment are considered to be dangerous. The patient is sent to a specialist, often with the statement that dilatation of the uterus is necessary in order to ascertain its abnormal contents.

It is self-evident that I exclude carcinoma of the vaginal portion and large uterine tumors easily diagnosticated by the touch. So, too, I leave aside retroflexions in which often the hemorrhage ceases after the rectification and application of a pessary if these were undertaken during its continuance. I shall only consider the large contingent of those cases in which



*the cause of the hemorrhage remains doubtful after simple bimanual examination.* Among them belong especially hemorrhages after delivery, and particularly after abortion. Very often we find the uterus somewhat enlarged, painful, but in normal position; with this there is menorrhagia which changes to metrorrhagia under external provocation, such as difficult defecation, exertion, and coition. Leucorrhea is also present, so that a large number of cases coincide with those which I traced back to disturbance of involution in section II.

For years I introduced laminaria tents, on principle, in such cases, dilated the uterus, and, in the majority, found *nothing* in the uterus. The suspected or diagnosticated remnant of abortion was not there! This cannot be an accident, and I believe that hemorrhages are of frequent occurrence as a sequel of abortion without remnants of that abortion remaining behind. Already in the second edition of my "Clinic of Obstetric Operations," I have pointed out that after very early abortions the uterine mucosa or the decidua may remain in the uterus as it does during menstruation. That these cases are the ones in which hemorrhage occurs owing to faulty involution and hypertrophy of the mucous membrane I cannot prove, but think it highly probable. On the strength of this observation, I have frequently, when the length of the uterine cavity did not exceed one and a half centimetres ( $\frac{3}{8}$  inch) and the uterus was clearly thickened, "experimentally" at first, made an injection of liquor ferri. To many this will appear hasty and faulty. However, in this connection, I would point to the great difference between hospital and private practice. There is not the slightest doubt that dilatation and palpation of the uterus can be done harmlessly and aseptically in a hospital. Likewise, of course, when the patient is willing and able to remain in bed for several days, when assistance and nursing can be had. But the majority of patients are poor women who at once seek other, often incompetent aid, when the treatment proposed appears too troublesome or expensive. But what good is to be expected from a treatment which can be used only in a small number of patients of the better class?

At first, for scientific reasons, I, too, could not make up my mind to perform the immediate injection of tincture of iron. But, finally, I often had either to leave the poor women to their

fate, or assist them in the best way I could. The large number of cases in which an injection of iron gave positive relief, its absolute harmlessness, and the facility of application induced me to inject this agent, often as the preliminary, and finally as the only treatment.

Should dilatation be done before performing this injection? Having injected liquor ferri several hundred times into the undilated uterus without a single untoward result, I maintain that *a preceding dilatation is unnecessary!* The hemorrhage cannot occur without hyperemia of the mucosa, the hyperemia of the mucosa not without that of the uterus, the hyperemia of the uterus not without temporary enlargement, temporary enlargement not without general relaxation, relaxation not without softening, and the softening not without the possibility of easy dilatation!

A profusely bleeding *hard* uterus into which Braun's syringe *could* not penetrate, I have not as yet observed, unless it be in the case of circumscribed malignant new-formations and in senile atrophy.

But that tincture of iron, which at once coagulates all secretions, should pass through the tube appears highly improbable to me. And what if it did? Would sepsis or peritonitis be the consequence? Even that is not to be expected, after the experiments of Schwarz (*Centralblatt für Gynäk.*). How would this harmonize with the observations that ovarian pedicles and separated bleeding adhesions are seared intra-abdominally without untoward consequences?

I have never given injections of liquor ferri in office practice. Preparatorily the women must irrigate their vagina with disinfectants three times during one day, or have a nurse give the irrigations. On the following morning the patient remains abed. After ascertaining the direction by the sound in the lateral or dorsal position, whichever seems more convenient, the uterus is washed out through the uterine catheter. This is necessary for the reason mentioned above, in order that the caustic come in thorough contact with the uterine mucosa. It is almost immaterial whether the liquor ferri is diluted, at least up to the strength of one in three. Should the injection be given in the lateral position, which is best, the liquid is soon seen to ooze from the os together with black coagula. In the

dorsal decubitus this is felt with the tip of the finger placed against the os uteri, or is distinctly perceived after the withdrawal of the finger. Then we palpate the abdomen to ascertain eventual sensibility, wait a few minutes to see if uterine colic ensues, keep the patient in bed the rest of the day, order vaginal irrigations for two days to guard against subsequent decomposition and infection, and the treatment is at an end. According to my memoranda, in one hundred and twelve injections I have observed uterine colic only once, where the cavity was very wide, with coexisting strong flexion. Of course, if the whole quantity is rapidly thrown in one stream against the fundus, colic will be more frequent.

A few times I have also observed the expulsion of a small remnant of abortion adhering to the coagula. Not rarely, too, some bleeding continues for one or two days after the injection; we then wait quietly, for we have to deal merely with reddish serum or with remnants of the coagula mixed with the injected water. Metritis with slight fever occurs when the vagina is not carefully cleansed after the injection. Should decomposing crusts be left behind, metritis may succeed because the decomposition travels upward.

What trouble did a laminaria dilatation make! And the results were in no way better. On the contrary: if the patients did not remain abed for days after the dilatation, the next menstruation was more profuse than before, and was followed by an exacerbation which the patient justly attributed to the "cure;" and *the uterus was larger than before*.

The results of this simple treatment of mine are so good that, even if among twenty cases there is one failure, the *general* gain is still very great. But I believe that, after the description of the somewhat circumstantial, tedious treatment of hypersecretion and catarrh of the endometrium, nobody will be under the impression that I advise such hardly careful and hasty treatment *in general*.

Either the failure of the above-described harmless treatment, or an obvious enlargement of the uterus as demonstrated by combined examination, the length indicated by the sound, and the mobility of the sound in the uterus, demand a different procedure. We know that there is "*something*" in the uterus. Whether it be merely the swelled mucosa, a remnant of abor-



tion, a mucous polypus, or a small submucous fibroid is to be ascertained. In these cases, too, we very often can succeed without *that considerable dilatation* which permits the entrance of the finger.

*However, the curette, an indispensable instrument nowadays, is not alone adapted for operating, but also for diagnosis.* In the first place, regarding its form and size, I find Sims' curette the most convenient instrument. But the stem, as far as the steel loop, should not be of copper but of German silver, and be at least a little flexible. The copper stem becomes bent in the cervix as soon as pressure is made with the point, and does not admit of the employment of the necessary force. Furthermore, the anterior moderately sharp part of the loop which is to do the scraping—I shall call it the edge—must be nearly vertical to the length of the instrument. If the edge is directed too far downward, we cannot scrape at the fundus where it is often most necessary. I use curettes the upper width of which exactly corresponds with the dilators. The smallest curette is just as broad as the ordinary sound, and hence can be used wherever sounding can be done. For we must admit that broad curettes really serve no purpose. Wherever we scrape *once* with the broad curette, we scrape *two or three times* with the narrow one. The effect is all the same. Moreover, we dispense with the dilatation. In the lateral position the cervix is grasped with tenacula and drawn forward, thus making the uterine cavity almost straight. Then we sound or introduce dilators Nos. 1 and 2, and pass the curette into the uterus. From the facility with which the curette can be moved to and fro, the resistance, the penetration into soft tissue at some places, the masses removed out of the uterus appearing at the external os, we draw the necessary conclusions. Thus it is easy to demonstrate whether there is anything present to be scraped off, whether the uterus is not merely very thick and soft. Soft carcinomatous nodes, adenomata, or polypi can likewise be diagnosed by a deep penetration with the curette; small remnants of abortion follow the removed masses. After this procedure, which is always done without chloroform, and which is not at all painful in the lateral position, the uterus is washed out with carbolic solution. During the repeated withdrawal and reintroduction of the catheter, some flocculi are brought

out which suffice for microscopic examination. The hemorrhage is rarely profuse. Especially after abortion, after confinement in which there is a strong tendency to hemorrhages, excellent results are obtained in this manner. In order to excite the uterus to contraction, liquor ferri can then be injected and ergot given.

There are undoubtedly many cases of so-called fungous endometritis in which the pulpiness or hyperplasia of the mucosa is not the cause but the consequence of the continuous hemorrhage. The uterus is soft, yielding, the permanent presence of blood dilates it somewhat. The mucous membrane can become thicker without encountering resistance, without overcoming any pressure. Even the fact *that it is bleeding for a long time* must make the mucosa thicker, must supply it with ample nutrient material, and thus cause persisting hypertrophy. This condition, of course, may recur, despite appropriate treatment, when the metritis—the hyperemia of the uterus—continues. And, as to the latter, we are almost powerless. Deducting, besides, the cases of adenoma or sarcoma of the mucosa, certainly but few cases of “endometritis fungosa” as a disease *per se* will be found to remain.

From what has been stated, therefore, it follows that in many cases the curette is at once a *diagnostic AND therapeutic* instrument, and that dilatation becomes unnecessary if a narrow curette is used.

Dilatation by laminaria tents would be absolutely superfluous. What it accomplishes we effect by a slight pressure with the dilator or catheter.

The next group comprises those in which we suspect tumors. In these, according to extensive experience, I think it best to examine and operate during the hemorrhage. The latter has effected naturally what sponge and laminaria tents produce in an unnatural way—it has softened the tissues. *It is still very questionable whether the serous infiltration effected by laminaria or sponge tents is quite harmless. On the contrary, we must assume that the serous fluids transuded into the tissues form the best soil for infectious diseases. Nearly all authors warn against long-continued laminaria dilatation, because it is usually followed by fever.* What should this mean except that a favorable soil has been created, that despite the most

careful disinfection the ubiquitous cocci have established themselves and led to decomposition, to infectious inflammation, and to fever? Should an intrauterine operation be done in the beginning of this infectious inflammation, we must not be surprised at disagreeable incidents. I call to mind especially the reports of operations on the larger myomata which were enucleated with difficulty.

It is precisely where an intrauterine operation is to be done that rapid dilatation is in place, and best of all, operative dilatation, *i. e.*, incision of the os and forcible introduction of the finger according to Schroeder. A vulsella is hooked into each lip; these hold the uterus firmly, and the finger, gradually dilating the organ more and more, forces its way upward.

Among these we find particularly difficult cases, for instance, the operation on a small polypoid myoma in a middle-aged virgin. Here laminaria tents likewise fail, as I have ascertained by experience. In several cases I did not secure sufficient dilatation with laminaria; in the body of the uterus, where there was room, of course the tent dilated, but it was incapable of separating the internal os. Neither Schultze's nor Ellinger's dilators were able to procure sufficient dilatation because the instruments feathered too much. Both instruments gain their triumphs where they are really superfluous, *i. e.*, where the os is already softened. Of course these operations are often very difficult, but still they can be completed. Several times I have consumed more than an hour in the removal of a myoma measuring but three or four centimetres in its greatest diameter. A finger and Siebold's scissors alone could be passed up through the cervix; the tip of the finger controlled each little cut and gave assistance. Still, finally I succeeded in loosening and removing the small growth.

Better, and particularly appropriate to prove the excellence of Schroeder's method, are those cases in which the fibroid has expanded the cervix, which surrounds the tumor as the tensely dilated os of a primipara does the head of the fetus. Here it is easy to test the mobility or possibility of torsion of the tumor with the vulsella. Two lateral bold incisions make room; the tumor yields to traction; the finger is forced in alongside of it, dilating with vigorous pressure; each incision toward the base of the tumor renders the pedicle thinner and



longer; all at once the fibroid tears off—the operation is finished. In these cases it is a great advantage to terminate the operation in *one* sitting. I dread deep incisions into or as far as the parametrium much less than repeated operating on different days. Despite every precaution, it is not possible to keep the case aseptic. I have always regretted when I did not energetically terminate the operation in *one* sitting, in spite of hemorrhage and prolonged duration of the operation.

It is evident, of course, that this description does not apply to large and intramural fibroids.

It is different with cases of larger soft polypi or several mucous polypi in the uterus. The size of the uterus and a diagnostic curetting make it appear necessary to convince ourselves of the contents by digital palpation. Should it be impossible, after seizing the uterus with tenacula, to insinuate the finger, my, or Hegar's, or other dilators must be employed, that is to say, instruments of gradually increasing circumference, so that progressively thicker wedges are forced into the os. Finally the finger undertakes the work of the dilator. Should difficulties be encountered, lateral incisions are made (see above). If a large, soft mass be then felt, it is necessary to remove it at once. Formerly, especially in the case of soft polypi, I have tried to grasp them with forceps, to pass a snare around them, draw them down, and then remove them. Often, however, during these preliminaries, the hemorrhage was so enormous that the operation had to be interrupted and the tamponade performed. That alone renders the case more unfavorable. The best method is, to introduce a *large sharp* curette of one to one and a half centimetres in breadth, and vigorously and rapidly—I should say, not scrape off, but cut out the tumor. The latter is the more correct expression. With small curettes which are not quite sharp we *destroy* the tumor; shreds remain behind; bleeding finally is profuse, and endometritis may follow through the sloughing of the destroyed masses. But if the soft tumor is *quickly* removed by large incisions with the sharp spoon, the hemorrhage lasts only a short time. With the finger we soon ascertain the state of affairs and are able to arrest the hemorrhage by swabbing the uterus with tincture of iron. Moreover, by the tamponade and pressure from without, the hemorrhage usually ceases sponta-

neously, owing to the contraction of the uterus. I should add that it is necessary to be very careful in case the spoon easily enters the tissue. Then we have almost always to deal with malignant tumors which have softened the musculature. Under these circumstances the danger of perforating the uterus is imminent. By careful control from without, this fatal accident may be avoided. The procedure is not materially modified when, instead of a polypus, a movable remnant of abortion is present.

As to the danger of the employment of sponge tents, a case in the practice of another physician was to me a warning example. In the presence of profuse hemorrhages and moderate enlargement of the uterus, that gentleman had passed a sponge tent into the uterus. This was immediately followed by septic peritonitis terminating fatally in four days. Professor Marchand, of Giessen, then at Halle, performed the autopsy, which showed that the inflammation had extended through the not materially dilated tube. In the uterus was a polypus the size of a nut, which was colored black by extravasations; it was devoid of smell and showed no perceptible traces of decomposition. Perhaps the patient could have been saved. But, from the first onset of the fever, it had been treated by internal medication only.

It is self-evident, of course, that these intrauterine operations must be followed for several days by irrigations of the uterus and vagina, and that the temperature is to be controlled.

This description includes nearly all the groups of cases in which dilatation of the uterus comes in question. I know very well that the subject cannot be exhausted in a brief article, and that, therefore, I have produced nothing complete. Still I hope that this paper may be of service to some practitioners. Would that the time were at hand when the minor operations of gynecological surgery are the common property of all physicians!

BRESLAU, August 1882.

THE IMMEDIATE USE OF THE UTERINE SCOOP OR CURETTE  
IN THE TREATMENT OF ABORTIONS, VERSUS WAITING OR  
THE EXPECTANT PLAN.

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BY

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I AM induced to write the following paper mainly for two reasons.

First.—In recently published text-books on obstetrics, we find insufficient stress laid upon the importance of removing AT ONCE a retained placenta after abortion.

Second.—My wish to place before the profession the success which has attended the use of the dull curette or uterine scoop in my hands in such cases, and the hope that those who are engaged in general practice will give the instrument a fair trial and add to its reputation. A notice of this instrument can be seen in Mundé's "Minor Surgical Gynecology," page 285, where one devised by him is described, for the removal of retained placenta *immediately after the accident*.

There is also a diagram of the same instrument in the July number of the JOURNAL OF OBSTETRICS, 1880, and alluded to by Dr. Kessler as being independently and simultaneously devised by Drs. Lusk and Mundé.

Priority of publication, however, of the instrument relative to its valuable aid in removing retained secundines, belongs to Dr. Mundé.

In order that I may convey the object of this paper in a clear and comprehensive manner, I will first place before my readers a digest of the teaching advanced by a few of the more recent authors on this subject. And in urging a reform in this matter I do so from the conviction that I have at least a claim to the possibility of being justified, based, as the wish for reform is, upon somewhat extended personal experience. What led me to question the soundness of these doctrines was the occurrence of some discouraging experience I sustained



during the first few years of practice, and I am convinced to-day that I would never have experienced an unsatisfactory case had I not carried out faithfully these very doctrines, the wisdom of which I now so strongly question.

The young obstetrician takes up a prominent text-book of the present day, and he finds there that, if the ovum has been expelled and the secundines retained, he must place a tampon in the vagina, sit down and wait, for twelve or twenty-four hours, and that, if the placenta is not then expelled, he is to tampon again, and so on *ad infinitum*. Leishman says:—"If therefore the whole ovum is not expelled entire, the effect of the uterine contractions will be to rupture the membranes and expel the embryo through the cervix which has been sufficiently dilated for the purpose. The action then ceases, the os closes, and the placenta is retained. This being the state of matters, *we can do nothing but wait, the safest course is that of an expectant attitude*, when, after the interval of hours or days, hemorrhage may become so profuse as to require the plug while we wait for the dilatation of the os."

Here it is clearly shown that the entire cervix has become sufficiently dilated to allow of the exit of the embryo and therefore of the entrance of the finger. And instead of endeavoring to empty the uterus while the cervix is dilated, or dilatable, we are quietly to sit down and wait until our unfortunate patient has *almost* bled to death, and the placenta, inclosed as a foreign body in the uterus, has undergone decomposition and given rise to septicemia. In just such cases as these, the curette can be used without causing the slightest pain to the patient or injury to the parts, the secundines removed, the hemorrhage arrested, and the patient left safe and comfortable.

The baneful effect upon the young practitioner of the teaching embodied in the above quotation is what I wish to make clear and emphatic. All experienced gynecologists know that a large percentage of the material they meet with at their outdoor clinic finds its way there for the relief of sufferings which result from neglected and mismanaged abortions.

We will now turn to Dr. Lusk's very able work on obstetrics, of recent publication. He says: "With the removal of the compression exercised by the ovum upon the inner

uterine walls, hemorrhage occurs, which continues until the *complete expulsion or removal of the membranes and placenta.*" He continues: "The principles of treatment in these cases are very simple. The indications are to check the hemorrhage and to empty the uterus." But the author has already shown that the hemorrhage will continue until the uterus has been emptied. I say (if the patient is not in a state bordering on collapse), why not act upon this admitted truism and empty the uterus at once? And the cessation of hemorrhage will, as a consequence, follow.

He tells us that cases which are treated with rest in bed, ergot, cold cloths to the abdomen and vulva, suffer considerable loss of blood, but most of them terminate favorably, though some of them may *almost die*.

Now these views conflict somewhat; for, if it is admitted that the hemorrhage will continue until the uterus be emptied, why should we continue to talk to the young and inexperienced about rest in bed, ergot, cold cloths, etc., with the inevitable result in store for him of almost losing his patient before he begins to think of doing what he should have done at the outset?

Dr. Lusk now tells us how we are best to arrest hemorrhage. He again says, "clean out the uterus," but the manner in which he directs it to be done—passing the forefinger up the side of the uterus, across the fundus, and down the other side, forcing the placenta into the vagina—is, I will endeavor to prove, an impossible act in very many cases. If we will bear in mind, *first*, how long our average forefinger is, and, *second*, how far we are able *safely* to force the uterus down in the pelvis, my reasoning will appear obvious.

Mundé says, in his "Minor Surgical Gynecology," page 54: "The natural position of the fundus uteri is about three inches above the upper border of the symphysis. When the uterus can be pressed down under the symphysis, or into the sacral excavation, it is indicative of excessive mobility and relaxation of its supports."

Savage says: "The uterus, when pulled down by a vulsellum until it seems to threaten some physical damage to the opposing structures, descends but about one and a half inches." So that, if we say that the uterus is forced down to within

two inches of the outlet of the soft parts, and that it measures four inches in depth with a retained placenta, we would require a forefinger of at least six inches in length to accomplish the feat recommended by Dr. Lusk. I admit it can be done, causing very severe pain, in middle-aged women who have borne many children, and in whom the uterine supports have become very much relaxed. But I speak of the conditions which we generally meet with in abortion cases; in young married women, for instance, pregnant for the first or second time, and aborting at a period between the third and fourth months.

We will now pass to a little work on obstetrics by Dr. King, of Washington. He says: "Hemorrhage being excessive, our main and sure reliance is upon the tampon. A prepared sponge-tent placed in the cervix uteri *may* precede the tampon and assist dilatation if necessary. If the woman is very weak from hemorrhage, a second tampon should be ready before the old one is removed."

Now, if a tent had been introduced and properly retained, I cannot see why a second tampon should be required when the uterus can be emptied there and then by the curette, and all trouble ended. Dr. King also recommends the administration of a brisk purgative and emetic (ipecac) to facilitate the expulsion of retained secundines. And should symptoms of blood-poisoning set in from a decomposing retained placenta, Dr. King relies only on carbolized injections. This is, indeed, dangerous teaching for the inexperienced to act upon. In concluding a criticism of the manner in which this subject is treated by authors of the present day, I will briefly allude to a review by Dr. E. L. Partridge of a "Text-book of Modern Midwifery" by Rodney Glisan, M.D., published in the SUPPLEMENT OF THE JOURNAL OF OBSTETRICS for April, 1882. It says: "In speaking of abortions, we do not find sufficient stress laid upon the thorough emptying of the uterus of the secundines. Dr. Glisan thinks it better to wait for the uterus to expel its other contents, which may occur after a variable period of from a few hours to a few days or weeks, rather than undertake artificial dilatation and removal."

He says: "If fragments of secundines retained cause hemorrhage, it becomes necessary to keep her quiet until this diffi-



culty has been overcome." *Not alluding to methods for their removal.* The reviewer goes on to say: "If the author's plan should be followed, we should expect to be subsequently called upon to treat such affections as subinvolution, areolar hyperplasia, fungoid degeneration, and almost any of the forms of chronic uterine disease. We do not wish to take extreme views upon treatment in this particular, though it is probably the mismanagement rather than the occurrence or recurrence of abortions which leads to ensuing uterine disease."

I will now relate briefly the notes of a few of the more interesting cases of abortion out of a total of twenty-eight (28), which I have treated by the *immediate removal* of the secundines with the curette.

CASE I.—Mrs. C. sent her husband for me 16th September, 1880, saying that his wife had been bleeding for the last three days; that he thought she must be having a miscarriage. I found the patient aged about thirty-eight years, mother of four children, had had one miscarriage before, had not been *unwell* for four months; had some pain and losing large quantities of blood. She was somewhat blanched and with rapid pulse. I found the os and cervix open, a movable mass entering the cervix from the body of the uterus. With all my endeavors I could not insinuate my finger farther than just within the internal os. I now began with the curette, with patient on left side, and after a few minutes, gently manipulating the instrument between the walls of uterus and placenta, I withdrew it, introduced the **uterine forceps** and withdrew the mass. The force required to do the latter was sufficient only to overcome the slight obstruction caused by the internal os. In this case there was **immediate and complete** cessation of hemorrhage, pain, and anxiety on the part of patient.

CASE II.—February 20th, 1881, I attended a Mrs. M., aged twenty-eight years; had been married six months; bleeding had been constant for the last eight days. I found she had been attended to by another physician during this period, whom I now sent for. He related to me that he had tamponed her carefully night and morning during his attendance without any good result. That a fresh outbreak of hemorrhage always began about an hour or so before he changed the tampons. The patient was extremely anemic from the exhausting hemorrhage, but gave no evidence of impending collapse. Had a little difficulty at first in introducing the curette on account of a sharply anteflexed uterus, but when I succeeded, there was no difficulty in detaching the retained placenta. This woman made a rather slow recovery from the large amount of blood lost. I had her afterwards under treatment for a subinvolted womb.

CASE III.—The following March I was called to see a lady whom

I had attended in several confinements. She was naturally of a very nervous temperament. I found her in a very much excited condition; she was bleeding some, but not profusely. I found the cervix open as far as the internal os, but there it was quite closed. Not being able to feel anything like the membranes protruding, I concluded the embryo had escaped, and that the internal os had closed upon the placenta. It was about two A.M., and to gain time until morning I tamponed the vagina with cotton, using a Sims speculum. At seven o'clock I was again sent for; hemorrhage was now very severe, the blood passing round the tampon as if there had been nothing there. I removed the plug and found cervix still undilated. I now introduced a tupelo tent, placed a layer of cotton-wool over it, and left her. I returned at one P.M., removed tent, introduced curette, and removed in two parts a mass of placental membranes. This patient was quite well in a few days.

CASE IV.—The next case of interest occurred to me last May. I had much difficulty here. Supposed to be five months pregnant. Syphilitic mother, lost nine children previously, all dead-born. I found her suffering most intense abdominal pain. Pulse, 140; temperature, 104° F. Had one chill that morning. Bleeding slightly. Found dead fetus protruding through external os. Delivered it at once with fingers. But now came the "tug of war." I could not reach placenta with finger, and cervix was beginning to close. The patient said she could not suffer any more pain than she was at that moment; told me do whatever I thought best to relieve her. I began at once with the curette; patient on left side. I had a very severe task for about twenty minutes, as placenta was so firmly adherent to walls of uterus that nothing but the curette could have removed it. In this case I washed out the uterus with carbolized warm water, and passed up to the fundus a suppository containing fifteen (15) grains of iodoform. The remarkable part of this case consisted in the very satisfactory fact that, on calling eight hours after operation, her temperature and pulse were *normal*; pain had completely vanished with completion of operation.

CASE V.—On 2d last September, I was sent for to see a patient of a medical friend who was away at the seaside at the time. On entering the room, I became aware of a horrible stench. I saw a young woman lying in bed. She had a rapid pulse and hot skin. Said she had been bleeding at times for the last six or seven days. Had chills and vomiting for the last two days, and said she knew there was a "nasty stinking thing up there," as she expressed it. I was making an examination as she spoke, and found an open os and cervix with a soft mass engaged in it. This I could just touch with my index finger. Any attempt at pressure over the fundus caused intense pain, and could not be tolerated. I now began to scold her for not having sent for me sooner to remove this "stinking thing," when she informed me that Dr. So

and So had been in attendance upon her ever since my friend had left town, and that he had given her several draughts to bring it away, *but would not interfere with nature in the matter*. I left her, saying I would call on Dr. —, and that we would come back together and remove the after-parts. I missed the doctor. He called in the mean time, and on learning what I was about to do, did it himself, what he should have done a week before.

I could continue relating many more cases (indeed, I have had two equally striking and successful cases since this paper was written), each showing some point of interest, but feel reluctant to impose more on the space of the JOURNAL.

In substantiation of my views, and as corroborative evidence of their possible correctness, I will briefly refer to some reports recently published upon this subject in American journals.

DR. MATTHEW D. MANN, of Buffalo, writes an able article in the September number of *The Buffalo Medical and Surgical Journal*. He says: "We are often forced as obstetricians to take a prominent and active part in the management of the affair, and the danger is not of doing 'meddlesome midwifery,' but rather of trusting to nature a task for which she is often entirely incompetent." In speaking of cases of excessive hemorrhage with escape of ovum but retention of placenta, he says: "After the tampon has been in place from twelve to fifteen hours it must be removed, and if finding the placenta still retained, the cervix undilated and the flow free, there is no use waiting any longer. Further use of the tampon is not likely to do good. It is painful and becomes dangerous." Dr. Mann then recommends the cervix to be dilated by tupelo tents or the steel dilators, and the uterus cleaned of its contents. He continues: "I never could feel satisfied about a patient after an abortion if I knew she had a placenta remaining in her womb. Even if symptoms of inflammation have set in, it is better to remove the cause and give the woman a chance."

DR. STANLY P. WARREN, of Portland, in a paper read before the Maine Medical Association, says: "In cases of sudden flooding, cervix open, severe shock, etc., we should relieve shock, check hemorrhage, and when reaction sets in, the contents of *uterus, if any*, should be removed. In cases where hemorrhage is moderate, fetus expelled, cervix open, and placenta within reach, we should use the finger or curette." The



finger he considers less liable to injure the parts, but the curette causes much less pain. He has not found the OVUM FORCEPS AS SAFE AS THE CURETTE.

"In cases where the fetus is expelled, secundines retained for days and septicemia present, we should use the dull curette followed by intrauterine injections."

In the *Louisville Medical News*, DR. WM. H. WATHEN writes: "If the os remains patulous and the placenta is not expelled, it should be carefully and thoroughly removed."

In cases where the cervix is closed and the placenta retained, he advises delay not longer than twenty-four hours, when it should be removed *at once by artificial means*. There are so many serious complications that may arise from a retained placenta that it is *never* safe to allow it to remain in the uterus over twenty-four hours.

A very interesting discussion took place on this subject, 5th February, 1878, at a meeting of the New York Obstetrical Society.

DR. SKENE (the President), in answer to a question, said he would not wait more than five minutes in cases in which the os was fully dilated. He had always taken care that any portion of the ovum should be removed as quickly as possible, in order to protect the patient from the dangers of septicemia. Where there was complete dilatation, he did not wait for the effect of ergot, but at once removed the contents of the uterus by means of a loop of soft wire or *flexible curette and he had never had occasion to regret the practice*. When the cervix was closed, he would wait just long enough to dilate it before removing the placenta.

DR. NOEGGERATH indorsed these views. He regarded it as the only safe practice to remove the placenta *at once*.

DR. THOMAS mentions some very difficult cases to decide upon in regard to treatment, but says: "It might be well, if the curette could be readily introduced, to remove the remains of the ovum *at once*." If there is evidence of septicemia, Dr. Thomas is in favor of dilating the cervix and removing the placenta immediately. Dr. Thomas said, when the subject lately came before the New York Academy of Medicine, he was not only surprised, but a little *shocked* to find so many

men who were *in favor* of allowing the placenta, as a rule, in these cases to remain undisturbed.

DR. MUNDÉ said : " If the placenta can be removed without undue violence, either by means of the fingers or some instrument, it should be *at once* removed."

Dr. Mundé mentions a case of retained placenta after abortion in the last October number of the JOURNAL OF OBSTETRICS, in which death took place from septicemia. Dr. Mundé's remarks in this case are most pronounced and emphatic in regard to the great importance of removing the placenta at once, either manually or with the curette. His experience in such cases, extending over a series of years, has shown him that the *careful and gentle* detachment of the placenta by the finger or dull curette and its withdrawal by blunt, broad forceps is attended by but little danger.

I have now, as far as the material at my disposal would allow me, given, I think, a fair and impartial resumé of the literature of this subject, one of so much vital importance to all engaged in general practice. This I have done, chiefly from the feeling that the subject wanted more weighty indorsement than I was myself able to give it.

At the present day, there is a strange feeling held by many that we are inclined towards the multiplicity of instruments in the carrying-out of our work. But those who will submit such feeling to careful thought will, I think, change their views. Let them bear in mind that just one hundred years ago it took only sixty cases of parturition to give *one* death, while at the present day it takes 264 or thereabout.

That one operation alone on women has given to that sex 40,000 years of happy life. These are events which mainly owe their success to instrumental aid, and belong to an age—iron if you will—but to which all other ages must look back upon with reverence and respect.

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THE IMMEDIATE REMOVAL OF THE SECUNDINES AFTER  
ABORTION.

BY

PAUL F. MUNDÉ.

It is not my intention to go over the well-worn ground of the treatment, expectant and active, of retention of the membranes and placenta after a miscarriage. I have frequently expressed my convictions on this subject, both orally and in print, during the past ten years, and have become accustomed to meeting with the same objections from the older members of the profession, the general practitioners; and the same indorsement from the younger, more bold, and, perhaps, more progressive physicians. I do not expect to alter the views of the former gentlemen who, in a practice of many years, have always found the "let-alone" policy answer well both for themselves and their patients. The settled convictions of years cannot be changed by the teachings or experience of others. But I wish to add my testimony to that of Dr. Alloway, as given in his paper in the present number, *in favor of the forcible (that is, manual or instrumental) removal of the secundines immediately after the expulsion of the fetus, in every case where the cervical canal is sufficiently patulous to permit the introduction of the finger or of the large dull curette or the placental forceps. Further, if there is hemorrhage, or an offensive vaginal discharge, or if the temperature rises, or there is a chill, and the secundines are still retained, no matter how soon or how late after the expulsion of the fetus, they should be at once removed, and, if necessary, the cervix dilated to facilitate the operation.* I have seen exhausting, almost fatal, hemorrhage continue for three weeks after a miscarriage, which was at once arrested on the removal of the retained placenta; and I have witnessed almost fatal septic infection come on within forty hours after expulsion of the fetus, and fatal septicemia from putrescence of the retained placenta, in spite of a temporary improvement after removal of that body on the fourth day. And I have seen women confined to their beds by hemorrhage, or annoyed



for weeks by sanguineous oozing, worried in mind and weakened in body thereby, all because the placenta had been left to "come away" by itself. That these occurrences are not pictures of fancy is known to every practitioner of experience. And that the anxiety of a woman who knows that her womb still contains a body which ought to and *must*, sooner or later, come away, or be removed by force, should be respected, as well as the undoubted danger from septicemia and hemorrhage which she incurs so long as the uterus is not emptied, seems so obvious as hardly to require renewed assertion.

And still we find the "let-alone" practice the favorite one among our highly respected older confrères, and occasionally meet with a disciple of the same doctrine among our younger brethren. I have noticed that, with rare exceptions, authors advise the active policy recommended by me, particularly those whom their special practice has made adepts in uterine manipulations. One of the few scientific writers on the expectant side of the question, Dr. A. Cordes, of Geneva, Switzerland (*Annales de Gynécologie*, October and November, 1876), indeed, goes no farther than to advise "armed expectancy," that is, to wait, with all the necessary implements at hand, until symptoms calling for immediate removal of the placenta supervene, until the placenta is detached and becomes a foreign body, and hemorrhage and offensive discharge, or a chill and high temperature indicate danger. This advice is very good when due warning is given of the approach of danger. But often the hemorrhage occurs so suddenly, or at an inopportune hour, or the septic poison is absorbed to such an amount as to overwhelm the system, and the removal of the placenta then comes too late. But recently a well-known and highly respected general practitioner of New York, who, in a large practice extending over thirty to forty years, had never forcibly removed a placenta after abortion and had never met with an accident (so he stated in discussions on this subject), was taught the lesson that I am here inculcating, by nearly losing a patient from septicemia, whose life was barely saved through the forcible removal of the retained and inoffensive (*sic*!) placenta, and appropriate after-treatment at the hands of an eminent specialist.

Having now expressed my opinion that *the future safety of the patient demands that the secundines should be AT ONCE*

*removed after expulsion of the fetus in every case of abortion in which such removal can be accomplished without force sufficient to injure the woman, I will proceed to describe the manner in which it has been my custom to perform this operation.*

As a rule, the physician is seldom called to a case of abortion until the fetus has already been expelled. Even in one's own practice, in cases where we are endeavoring to arrest the impending miscarriage, usually the fetus escapes during the absence of the medical attendant, who, on his arrival, finds it occasionally protruding from the cervix, in the vagina, or usually between the thighs or in the chamber-vessel, where it dropped as the membranes broke as the patient was straining while emptying her bladder. Or the fetus has mysteriously disappeared, having been lost when the pan of the watercloset was raised. If the physician is called in good season, soon (several hours) after this event, he will generally find the cervical canal sufficiently patulous to permit the easy passage of the index finger, perhaps of the middle finger also, by means of which the placenta can usually be gently and gradually pared and scraped from its attachment. If the abdominal walls are lax and thin, the other hand can readily grasp the fundus uteri and steadily crowd it down, so as to bring the whole uterine cavity within reach of the operating fingers. In this manner the endometrium can be scraped perfectly smooth, and every particle of membrane or placenta removed. In sensitive, nervous, or unmanageable patients, or with rigid, fat abdominal walls, the induction of moderate anesthesia, perhaps no more than the first stage, is almost imperative. I usually employ chloroform, both for its rapidity of action and convenience of administration.

If the placenta is still completely attached, some difficulty may be experienced in securing a starting-point from which to begin the separation; by gentle motion the finger-point can usually be insinuated between uterus and placenta at some favorable spot. The manœuvre recommended by Lusk, of paring the placenta off from one side and following it across the fundus and down the other side of the uterine cavity until the detached organ drops into the internal os, and is hooked out by the crooked finger, will do very well when the placenta (or membranes) is attached at the fundus and when the cavity is dilated

Usually the cavity is too narrow to permit the flexion of the forefinger and the most that member can do is to scrape loose the placenta. The removal of the detached secundines must then be accomplished by long dressing forceps or by the instrument shown in Fig. 1, which I had specially constructed for the purpose several years ago.

If the patient is anesthetized, if the cervical canal permits the easy passage of one or even two fingers, and if the abdominal walls are lax, the fingers will almost invariably suffice to detach the secundines, which can be also removed by these

FIG. 1.

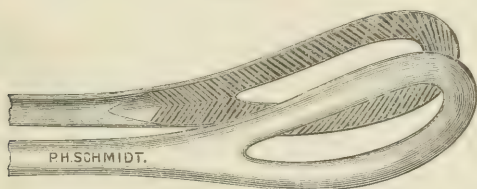


FIG. 1.—Mundé's placental forceps, 11'' long. Natural size.

FIG. 2, a.

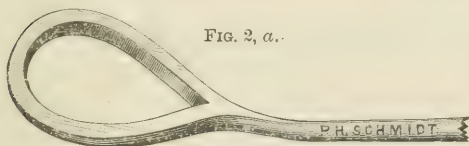


FIG. 2, b

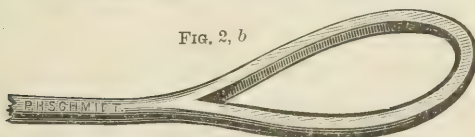


FIG. 2.—Mundé's placental curette, 16'' long. Natural size.

members, if two were used, or else by the forceps. But, if the conditions above mentioned are absent, and but one finger can be inserted into the uterus, the depression of which is prohibited by the tense or fat abdominal walls, cases familiar to all of us, in which the examining finger can but just touch the edge of the more or less detached placenta through the internal os beyond, which point it seems impossible to reach, then we find the long dull curette, shown in Fig. 2, the desired auxiliary. This instrument is merely an enlarged Thomas' copper wire curette, of which I have had two sizes made attachable to the same handle, the one broad and round, the other more oval for a less dilated uterine



canal. The method of using this instrument is the following: The patient (anesthetized or not) is laid crosswise on the bed, with her hips as near as possible to the edge, and her thighs are separated by assistants if necessary. The physician then, having first ascertained as nearly as possible the site of the retained placenta, introduces the index-finger and on it the large curette (the instruments all being placed in carbolized water) into the uterus, and while the left hand steadies the fundus arteri through the abdominal wall, the right gently guides the curette in its prying and scraping action on the placenta. A repeated introduction of the instrument is often necessary, before piece after piece of the secundines is detached, and the placental forceps is occasionally needed, either to grasp and withdraw already detached masses of secundines, or to nip off small nodules of still adherent placenta. Particularly difficult have I found the removal of residual fragments of placenta in either uterine horn, upon which the curette seemed powerless; only the broad blades of the placental forceps succeeded at last in grasping and removing these obstinate masses. After a final careful survey of the uterine cavity with the curette, and the removal of possibly overlooked fragments, the uterus is washed out with a two to five per cent solution of carbolic acid, the water used being either very hot or very cold, as the predilection of the attendant may be. I confess that ordinarily I prefer ice-water, because I am *sure* of its styptic effects, and because it is always at hand and certain to be cold enough. The temperature of *hot* water as a *styptic* is by no means so easy to regulate, although quite as effectual when sufficiently hot. It is impossible to have ice-water too cold, but hot water may easily be used scalding and then excoriate vagina and vulva. If there is no danger of hemorrhage, and especially if the discharge is fetid, I prefer *very hot* carbolized water to cold. I always use the fountain syringe for this irrigation, if it is to be had. I have never failed to see perfect contraction of the uterus after emptying it of its contents, whether the injection was hot or cold, and immediate arrest of the hemorrhage has been the invariable result of this treatment. I usually advise an ice-bag for twelve to twenty-four hours if the operation has been difficult or prolonged, but believe this to be merely a precaution.

If the placenta should have begun to show signs of decomposition, the treatment will not differ, except that unusual care should be taken to remove every adherent fragment and to thoroughly disinfect the uterus. This I think is most perfectly effected by injecting pure tr. iodine (it need not be Churchill's) into the uterine cavity, or if a syringe be not at hand, mopping out the cavity with a cotton-wrapped whalebone stick. This latter procedure is best accomplished through a speculum.

I have described this manœuvre as it is performed solely by guidance of the hands, since I prefer to control the uterus with the hand watching the organ through the abdominal wall. But I have occasionally scraped out the retained secundines through Sims' speculum, drawing down and steadying the organ by a tenaculum hooked into the anterior lip of the cervix. This practice is chiefly advisable when the *long* curette is not at hand. With the curette shown in the cut, the whole length of which is sixteen inches, the manœuvre is far easier and safer with the patient on her back and under guidance of the fingers alone.

It should be remembered that the curette is designed *only* for the *detachment* of still adherent portions of membrane or placenta; the *removal* of these bodies after their detachment is effected either by the fingers or the blunt placental forceps. I ought to mention that in the absence of the curette I have twice employed the Sims' vaginal depressor to remove the placenta with perfect success. It goes without saying that often the fingers will aid and supplement the curette in detaching fragments.

If the uterine canal is too narrow to admit either the index finger or the large curette, it should be at once dilated. This is done in the easiest, safest, and most speedy manner by the tupelo tent—an agent possessing the rapidity and extent of dilatation of the sponge while free from its dangers. The tupelo tent is procurable in any size up to that of a thumb (wherein it is superior to laminaria), and can be inserted into the cervical canal either with a forceps under guidance of the finger, or through a Sims' or bivalve speculum. I always use the Sims, steadying the cervix with a tenaculum in the usual manner and keeping the tent in place by a few disks of carbolized cotton. If the tent is inserted without the speculum, it is necessary to

hold it in place for ten or fifteen minutes with the finger until it begins to swell, when it will stay by itself.

The rapidity of expansion of the tupelo tents is almost as great as that of the sponge, and I have repeatedly removed the tupelo in an hour and found the dilatation sufficient. Thus the dilatation and removal of the secundines can all be accomplished at one visit.

I decidedly prefer the tupelo to the sponge, both for the ease of introduction and cleanliness of the former, and because (while I have never met with an accident from sponge tents) I am afraid to incur the risk of adding another to the many examples of septic infection from that agent. I think it best to dip the tupelo in carbolized vaseline before inserting it.

A very excellent dilator is the Molesworth, so far as efficiency goes; but I have found two objections to it—one, its liability to be out of order or to crack if not frequently used, and the other, that it dilates chiefly in the centre and leaves the very parts one most wishes to dilate, the external and internal os, comparatively in *statu quo*. Still I have used it in one case very satisfactorily.

It is scarcely necessary to say that in a large proportion of cases the finger will answer every purpose as a dilator. Thus I recently met with an instance of flowing from retained secundines for ten days after expulsion of the fetus, where the external os was so small as not to admit even the tip of my index finger, the uterus being anteflexed, and the cavity of the cervix being widely dilated by retained coagula. Here I gradually bored my finger through the external os (the border of which grasped it so tightly as to leave a furrow on the finger), then through the internal os, and scraped out the decidua with the curette.

As a rule, I prefer to do the curetting with the patient on her back, and with the external hand pressing down the fundus and controlling the movements of the finger or curette in the uterus. But sometimes, especially when the long curette is not at hand, the short instrument can be very effectually used through the Sims speculum, the cervix being drawn down with a tenaculum. When a larger portion of the placenta is retained, and especially when it is firmly adherent, I much prefer the watchful control of the outer hand to the always less



intelligent groping through a speculum. I recollect one case of a young primipara who miscarried in the second month, the decidua being retained for five days until the temperature went up to  $103.5^{\circ}$  and the discharge became offensive, where the vagina was unusually narrow, and the cervical canal barely admitted the finger. Here I found it impossible to insert the finger far enough to detach and hook down the decidua, especially as the patient's abdomen was so tense as to render pressure from without useless. I put her under chloroform, introduced Sims' speculum in the usual position, drew down the cervix with a tenaculum, and gently scraped the endometrium smooth with the middle-sized short curette, removing every vestige of the decidua. A carbolyzed hot-water injection was made into the uterus, and the patient recovered promptly.

If the discharge is offensive, or the shreds removed appear decomposed, or temperature and pulse are elevated; in fact, if there is the slightest suspicion of septic infection, after washing out the uterine with *hot* carbolyzed water, I am in the habit of using Sims' speculum and swabbing out the uterine cavity with pure simple tr. iodine, carrying it up on a straight cotton-wrapped stick. If I am at all anxious as to the continuance of the hemorrhage (as, for instance, in a particularly flabby uterus), I use the compound tr. iodine (Churchill's), and tampon the vagina tightly in the regulation manner through the Sims. I do not remember ever finding it necessary to tampon the uterine cavity by slipping the iodized cotton from the applicator, and leaving it in the uterus for twenty-four hours. Still, I can readily imagine that in miscarriages during the first two months with a very flabby uterus such a precaution might be advisable.

Now, the questions will very properly be asked, Is all this manipulation so free from danger that every physician can employ it, and is not the risk from the forcible removal of the secundines greater than that possibly incurred by letting them alone? I answer most emphatically to the first, Yes; and to the second, No.

It is true that the more experienced the practitioner is in gynecological manipulations the easier and safer is this operation. But even the most inexperienced physician can perform

*Cases of Artificial Removal of the Secundines after Abortion, seen from 1865 to 1882, by PAUL F. MUNDÉ.*

Year	Month of Preg-nancy.	No. of Pregnancies	Cause of Abortion.	Length of Time of Retention of Pla-centa.	Symptoms calling for its Removal.	Method of removing Placenta.	Result.	Remarks.
1 1868	4	3	Unknown...	2 hours.	Hemorrhage	Manual	Undisturbed recovery.	In Würzburg Ly-ing-in-Hospital.
2 1869	3	1	"	2 days..	"	"	"	"
3 1873	3	4	Retroversion	3 "	"	"	"	"
4 1873	3	3	Unknown	4 "	"	"	"	"
5 1873	3	2	"	1 week.	"	Dilatation; curette.	"	"
6 1874	4	3	Retroversion	1 day...	"	Manual.	"	"
7 1874	5	6	Hydatid mole...	2 mos ..	"	Dilation; sharp curette;	"	"
						tr. iodine.		
8 1874	3	2	Retroversion	Several hours.	"	Manual expression	"	"
9 1875	3	3	Unknown	"	"	Manual	"	Twins.....
10 1875	2	4	"	"	"	"	"	"
11 1875	3	5	Self-induced	2 days..	"	"	"	"
12 1875	2	6	Habitual	2 weeks.	"	"	"	"
13 1875	5	3	Sea-bathing	2 days	"	"	"	"
14 1875	3	2	Unknown	4 "	"	"	"	"
15 1876	2	4	"	1 week..	"	Tampons and ergot	"	In consultation.
16 1876	3	4	Habitual (syphilis).	Several hours.	"	Curette.	"	"

171876	2	Amputation of 8 hours. cancerous cervix by cauterizing wire.	Hemorrhage (exhausting).	Sharp curette; dulled on hearthstone.	Recovery.....	Pregnancy unsupected. Ultimately died of the carcinoma.
181876	2	3 Unknown.....	Several hours.	.....Curette.....	Undisturbed recovery.	
191877	3	4 ".....	2 days..	.....Manual.....	"	
201877	6 wks.	2 ".....	Several hours.	.....Tampons, ergot.....	"	
211877	3 mos.	3 Syphilis; habitual	6 hours.	.....Curette.....	"	
221877	2	2 Operation for lacerated cervix.	1 day...	.....Manual.....	"	
231878	3	5 Unknown.....	12 hours	.....".....	"	Pregnancy not recognized.
241878	3	3 ".....	6 days..	.....Curette.....	"	Consultation.
251879	2	4 ".....	2 " ..	.....".....	"	"
261879	2	1 ".....	5 " ..	.....Sharp curette.....	"	"
271879	4	4 Syphilis; habitual	None...	Tupelo tent; Molesworth dilator; ergot. Ovum expelled entire.	"	"
281879	3	2 Unknown.....	4 days..	.....Curette.....	"	"
291879	2	3 ".....	1 week..	.....".....	"	"
301879	5	4 ".....	5 days..	.....Manual; tr. iodine.....	"	"
311880	3	6 ".....	6 hours.	.....Manual.....	"	"
321880	2	4 ".....	10 days.	.....".....	"	"
331880	2	6 Retroversion...	2 "	.....".....	"	"
341880	2	1 Unknown.....	12 hours	.....".....	"	"
351880	3	2 ".....	None	.....".....	"	"
361880	2	4 ".....	Several hours.	.....Curette.....	"	"



Year	Month of Pregnancy	No. of Pregnancies	Cause of Abortion	Length of Time of Retention of Placenta	Symptoms calling for its Removal	Method of removing Placenta	Result	Remarks
37 1880	2	3	Unknown	1 week.	Putrid discharge	Curette; iodine	Pelvic cellulitis; recovery.	
38 1880	3	4	"	Several days.	Hemorrhage	Curette	Recovery	
39 1880	1½	3	Self-induced	3 "	"	"	"	Consultation.
40 1880	2	5	Unknown	?	"	"	"	"
41 1881	3	6	"	1 week.	Offensive discharge. Temp. 102.5.	"	"	"
42 1881	3	5	"	3 weeks.	Exhaust'g hem.orrhage.	Vaginal depressor as curette.	"	"
43 1881	3	2	"	2 days.	Hemorrhage	Curette	"	"
44 1881	3	4	"	3 "	"	Depressor as curette.	"	"
45 1881	3	2	"	1 day	"	Curette	"	"
46 1881	2	4	Self-induced	2 days.	"	"	"	"
47 1881	3	2	Unknown	18 hours	Exhaust'g hem-orrhage.	"	"	"
48 1881	2	1	"	10 days.	"	"	"	"
49 1881	3	2	"	4 "	"	"	"	"
50 1882	4	4	Self-induced	4 "	Septicæmia. Temp. 103.5.	"	Temp. fell to 98, then rose gradually to 107. Death on 6th day.	"
51 1882	2	2	Unknown	40 hours	Acute septicæmia. Temp. 103.5°. P. 150. Semi-coma.	"	Severe illness; recovery	"

52	1882	2	1	Unknown.....	10 days.	Hemorrhage....	Dilatation; curette.....	Recovery.....	Consultation; pin-hole ext. os, ante- flexion, hence retention of membranes and coagula. Return of pelvic cellulitis 2 w'ks la- ter. (Mt. Sinai Hos.) Consultation.
53	1882	3	4	Pelvic adhesions	4 hours.	"	.....Manual.....	"	"
54	1882	3	5	Self-induced....	1 week..	Profuse hemor- rhage.	Curette; in office.....	"	"
55	1882	3	4	Unknown.....	4 days..	Offensive dis- charge. Temp. 102°.	"	"	"
56	1882	3	2	"	None.	Temp. 102 5. Hemorrhage.	"	"	"
57	1882	2	3	"	Ovum entire 3 days..	"	"	"	"

# SUMMARY.

*Month of Pregnancy* : 2d, 22; 3d, 27; 4th, 4; 5th, 3. *Number of Pregnancy*: Primipara, 5; Multipara, 52.  
*Causes of Abortion* : Retroversion. 4; habitual, 4; self-induced, 5; sea-bathing, 1; pelvic adhesions, 1; hydatid mole, 1; operation for lacerated cervix, 1; amputation of cancerous cervix, 1; unknown, 39.  
*Length of Time of Retention of Placenta*: Less than 1 day, 16; 1 day to 1 week, 33; longer than 1 week, 6.  
*Symptoms calling for Removal*: Hemorrhage, 52 (exhausting, 8); septicemia, 5.  
*Method of Removal* : Manual, 22; instrumental (curette and forceps), 31.  
(Sharp curette..... 3  
Dilatation and curette ..... 2  
Curette and tr. iodine ..... 3)  
Dilatation and ergot..... 2  
Tampons and ergot..... 2  
*Result* : Undisturbed recovery, 55; cellulitis, 1 (dilatation and iodine also); death 1 (septicemia before removal of placenta).  
*Own Cases*, 27.  
*In Consultation*, 30.

it with impunity, both by the fingers alone and with the dull curette, if he but remembers that *force* should be absolutely avoided, and that the working of the internal finger or curette should always be controlled and watched by the other hand over the fundus uteri. To perforate a uterus during this manipulation seems to me practically impossible without the exercise of utterly inexcusable violence.

As to the dangers following the operation, I will but refer to the appended table of cases seen by me during the past fourteen years, in which I removed the secundines 57 times, by fingers and curette, with but one fatal result (from septicemia, which was present when I first saw the patient and which returned the second day after the operation), and one cellulitis, which possibly might have been due to the putrescence of the decidua before its removal. Surely the severe and dangerous symptoms (exhaustive hemorrhage in 8 and septicemia in 5 cases), and the rapid recovery in nearly all after the operation, may well be considered to outweigh this single, probably in any event hopelessly fatal result, and the one instance of mild cellulitis!

If figures carry any weight with them and prove anything, there can be no question that these 57 cases of mine prove the safety and utility of the forcible removal of the secundines. Of the cases, 30 were seen in consultation with other physicians, and the other 27 were women who sent for me before or at variable periods after the expulsion of the fetus. As the hemorrhage had continued in 39 cases from one day to two months, it is evident how much danger, suffering, and annoyance might have been avoided if the secundines had been removed immediately after the birth of the fetus.

#### A CASE OF PERNICIOUS REMITTENT FEVER AFTER PARTURITION.

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BY

J. LEWIS SMITH, M.D.

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AT 5 A.M. on May 21st, 1882, I was called to attend, in her first confinement, Mrs. Von L—, aged twenty years. She had a strongly marked nervous temperament, was quick to learn, so



that she was far advanced in the studies of the school from which she had recently graduated, was usually cheerful and vivacious, but was also subject to spells of depression and despondency. On account of her mental traits and the history of her life during the last two years, which had been one of unusual excitement, I had awaited her confinement with much anxiety. Two years previously, while in London, she had been very sick from a purely mental cause, having pungent heat of surface, and symptoms so alarming that Dr. Henry Lee, who attended her, considered her life in danger, but after two weeks she convalesced slowly. This sickness was followed by almost total loss of hair. A few days previously to the commencement of her labor, her urine was examined and found to be free from albumen.

Short but rather frequent labor pains continued during May 21st without any notable incident, except that early in the day she turned her head, raised her hand as if to shade the eyes, and exclaimed, "Oh, that horrid sight!" and I was told that during the last few days she had had hallucinations of this kind. On the night of the 21st, she slept but little, on account of the pains which occurred every five to ten minutes, but were short. At midday on the 22d, the os was fully dilated.

The first stage of labor was not interfered with in any way, either by opiates or attempts at dilatation, and, on account of the extreme tenderness of the external parts, very few digital examinations were made. At about 2 P.M., as the bag of water was presenting and far down, slight pressure upon it with the finger caused its rupture and the escape of the liquor amnii. After this, the labor-pains, still short and feeble, occurred about every five minutes. At 6 P.M., the head had escaped entirely from the os, and lay within half an inch of the vulva. After this the pains occurred at longer intervals and with but little expulsive power, so that no farther progress seemed to be made.

At 8 o'clock, the pulse, which was of fair volume, was found quicker than natural, probably about 108, and the patient stated that she felt no fetal movements, though the heart-beats were audible. Believing it unsafe to delay longer, I applied the short forceps, which was easily done on account of the low position of the child, and made gentle traction during each pain, using no force in the interval. In a few minutes the head began to pass the vulva when no farther traction was made, though the forceps were not removed till the head was born. The labor was completed with very little injury. No laceration apparently occurred from the passage of the head, as the perineum was carefully supported, and but a slight tear resulted from the passage of the shoulders.

I appreciated the fact that inertia of the uterus was present, and now administered one teaspoonful of the fluid extract of ergot, but the patient vomited soon after. The child was large, vigorous, and cried lustily. Dreading hemorrhage, I immediately after the birth of the child kneaded the abdomen till I felt the uterine tumor, and as the flow of blood seemed to be somewhat more

than usual, ice was applied to the vulva. The pulse remained frequent but strong; the appearance of the countenance was good; and the mother, overjoyed at the birth of the child, was very talkative, so that it was necessary to caution her to be quiet.

After the expulsion of the infant, the abdomen had been constantly supported and kneaded with one hand, so as to produce uterine contraction, while the other hand was introduced sufficiently within the vulva to determine the amount of flow. Soon the lower part of the placenta could be felt protruding from the os, and but little more than the ordinary loss of blood had apparently occurred. At this moment, without the least premonition of anything wrong, the patient ceased breathing, the hands and fingers were firmly flexed, and fingers compressed as if in a spasm, while the head dropped upon the chest. Not a moment was to be lost. I carried the fingers upward outside the placenta, with lateral movements, so as to produce detachment, until the mass was within grasp of the hand, when it was easily removed. Within one-quarter of a minute, the patient recovered consciousness, her apparent spasm relaxed, and she seemed to be in good condition. The pulse, as soon as it was possible to examine it, had nearly the normal strength, though accelerated.

The placenta was carefully examined by the mother of the patient and myself, and found to be entire. I saw no reason at this time why there should not be a quick recovery. Nothing abnormal was observed except the acceleration of pulse, and there was probably some elevation of temperature, though the thermometer was not used. Nevertheless, to guard against any hemorrhage which seemed to be the only source of danger, the uterine tumor was compressed, and held with the fingers more than one hour before the bandage was applied.

On the following day, May 23d, the patient seemed cheerful, though her pulse was still quick, and she complained of tenderness of the vulva. It was necessary to remove the urine with the catheter during the first two or three days. Twice on this day, and on subsequent days, the vagina was syringed with one quart of water at a temperature of 100°, containing a teaspoonful of carbolic acid. Twice or three times I aided in the operation, pressing forward the perineum so that the liquid would more completely fill the vagina. The lochia were never at any time offensive, and they seemed in every way normal; except that they were perhaps of a darker or duskier hue in the second week than is usual, as if from pigmentation.

During the 23d, the patient was quiet and apparently comfortable. She evinced interest in the baby, and talked considerably in reference to it. Nothing calculated to create alarm was noticed in her condition, unless the acceleration of pulse.

Early in the morning of May 24th, I was sent for and informed that the patient had not rested well, and had flowed considerably in the night, the discharge being pure fresh blood, not at all offensive. Before my arrival, she had vomited and expelled from the vagina a mass of clots about the size of a goose egg. I examined

these, and found them to consist of freshly coagulated blood. I wish to call attention particularly to this free flow of blood, and consequent washing out of the uterine cavity of any retained lochia, and the expulsion of fresh clots on the night of the 23d and morning of the 24th, for, within eight hours, there were indubitable signs that the disease had commenced of which the patient perished. At the time of my arrival the flow was not excessive, and no treatment was employed except tight bandaging and washing out the vagina with carbolized water.

At 3 P.M., May 24th, forty-three hours after the termination of labor, and with the lochial discharge normal since the hemorrhage in the morning, the patient had a rigor, not severe, and this was followed by more marked evidence of fever. Her temperature, however, did not rise above  $102^{\circ}$ , and she complained of headache. Although she had no abdominal pain, tenderness, or distention, I prescribed, in order to forestall puerperal fever if it were to be this, six grains of sulphate of quinia every six hours, a pill of one grain of opium, and two of camphor every four hours, and a poultice of flaxseed with mustard over the abdomen. I have since learnt that the medicine was given irregularly and often withheld, since it was not supposed in the family during the first days that the patient was so sick as to require medicine.

In a few hours the moderate febrile movement, which followed the rigor, diminished, and no unfavorable symptoms were observed during the following day, May 25th, except the slight fever. But on the 26th, another chill occurred, and from this time, without any appreciable local cause, fever of a remittent type continued. At some time each day the patient experienced a chilly sensation, followed by a febrile exacerbation, which continued several hours and ended in free perspiration. The temperature in the first week did not at any time rise above  $103^{\circ}$ , and in the remissions it was about  $101^{\circ}$  to  $101\frac{1}{2}^{\circ}$ . The tongue was moist and covered with a light fur, and the patient during the remissions was cheerful. Nausea was never a prominent symptom. It was in fact nearly absent, vomiting occurring but twice, so far as recollected, during the entire sickness; once when the clots of blood were expelled on the morning of the 24th, and the second time a few days subsequently.

So mild was the beginning and so gradual the development of the malady, that I did not myself suspect any danger till May 28th, when the paroxysms of fever became more pronounced, and of longer duration, and Prof. Lusk was called in consultation. After a careful examination he could discover nothing abnormal in the state of the uterus and its appendages, and recommended an increase of the quinine to thirty grains daily. Prof. Fordyce Barker, on the eve of his departure for Europe, also saw the case once, and concurred in the opinion that the uterine system was not in fault, and recommended the continuance of the quinine, with a single purgative dose of calomel, as there had been no free evacuation from the bowels within the last day or two.

The subsequent history of the case can be briefly given. Qui-



nine in as large a quantity as sixty grains daily did not control the disease. At first the sulphate was employed by the mouth, then twenty grains of the bisulphate were given per rectum three times daily, and when the symptoms were not ameliorated, seven to ten grains of the muriate of quinia and urea were administered hypodermically three times daily, while the medicine was also given by the mouth. Nevertheless the chills occurred each day, at irregular intervals, and the fever gradually became more intense and prolonged. Sometimes there was a distinct chill at some hour in the day, lasting perhaps five minutes, and a rigor at another hour in the same day, as in some cases of undoubted pernicious malarial fever.

During the remissions which continued from two to four hours, the patient so far improved, the temperature falling to  $101^{\circ}$  or  $102^{\circ}$ , with a corresponding reduction in the pulse, that I repeatedly thought the crisis past, even as late as the eighth or ninth day.

The chills began with little or no premonition. The patient asked for more covering over the shoulders, her aspect and demeanor changed, and her arms trembled as they commonly do in a chill. In the hot stage, which immediately succeeded the chill, the temperature rose to  $103^{\circ}$ ,  $104^{\circ}$ , or  $105^{\circ}$ , after the first week, and towards the close of life to  $107^{\circ}$ . The pulse moderately accelerated in the remissions, numbered 130, 140, and finally still more, per minute in the exacerbations, and the surface had the pungent heat due to so high a temperature. While in the first days of the malady the febrile stage continued perhaps six or eight hours, it gradually became more prolonged, till it lasted a considerable part of the twenty-four hours, and the remission was short. In the last days, also, the perspiration occurring with the abatement of the fever was more profuse than at first, drenching the underdress and the pillow, and cooling the surface. So that while in the hot stage we applied cloths coming out of ice water over the head, face and arms to allay the pungent heat, the surface now became so cool that, after the limbs were wiped dry, warm applications were plainly indicated.

During the last week of the case, Drs. Otis and Metcalf were also called in consultation, and they made daily visits till the patient's death. They likewise, after a careful examination, pronounced the malady pernicious or ataxic malarial fever, and recommended the continuance of the quinine, in the largest medicinal doses. It was through their advice that the muriate of quinia and urea was employed hypodermically.

The patient, cheerful at first, especially during the remissions, finally became despondent towards the close of life, when the febrile paroxysms became more protracted and severe, and the remissions shorter and less marked. On the seventeenth day after her confinement, muguet appeared over the faucial surface, a sure forerunner, according to my experience in febrile and chronic maladies, of a fatal ending. Up to this time there had been no abdominal tenderness or distention, but on this day, and until

death, the abdomen was considerably distended, but without tenderness. Overcome by the violence and long continuance of the fever, the patient died on the night of the eighteenth day after her confinement. The infant did well with a wet-nurse, but about two weeks subsequently to the death of the mother, the wet-nurse began to experience languor and headache, and had a chill followed by fever and sweating. She remained well till the second day afterward, when the chill, fever, and perspiration were repeated. She evidently had intermittent fever, and two more paroxysms were allowed in order to remove all doubt of the presence of a tertian ague, when the appropriate remedies were given. She had never had malarial disease previously, having been an inmate of the Nursery and Child's Hospital for six months, and in uniformly good health before entering this family.

### Remarks.

Febrile attacks occurring in the parturient state are very apt to be attributed, by the physicians as well as friends, to something wrong in the confinement, although their occurrence in the lying-in period be a mere coincidence. Of course childbirth does have a causative relation in one way or another to a majority of such attacks, and this leads us to think, when summoned to a case of post-partum fever, that it is due in some way to the parturition, unless there be clear proof to the contrary. The *post hoc ergo propter hoc* mode of reasoning influences our opinion in this matter as well as in many others. In my attendance upon the present case, although having the utmost regard for the opinions of the distinguished consulting physicians, I could not discard the thought that, perhaps, we were contending against a case of septic poisoning, until the occurrence of another case of genuine malarial disease in a member of the same household removed the doubt. Probably many deaths occur from supposed puerperal fever, which are really the result of other and distinct maladies, as in a case which was recently related to me, where a patient died some days after her confinement, of what seemed to be puerperal fever, but the autopsy revealed typhoid lesions.

In the London *Lancet*, May 3d and 10th, 1879, the late Charles Murchison mentions nine distinct pathological states, which cause fever attended by daily remissions, or complete apyrexia, but it is evident that the differential diagnosis in the case which we are considering lies between two of these, to wit, malarial fever extended in its definition so as to embrace

the typho-malarial fever of writers on the one hand, and pyemia or septicemia on the other. The reasons for regarding it as a distinctly malarial disease are the following :

1st. The ascertained presence of malaria where the patient resided, as shown by the development of a tertian intermittent fever in a woman who was previously well, and had been for three weeks in charge of the infant on the same floor where the sickness occurred. The nurse occupied the rear room, the patient the front room, the atmospheric conditions in the two apartments being in all probability identical. In the immediate vicinity of Fifth avenue and Fifty-third street, where this case occurred, there has been considerable excavation during the last two or three years, and Dr. Leale, whose observations were made in the same locality, can relate cases to show how exhalations from upturned soil in the city produce severe forms of fever. Trousseau says of pernicious intermittent fever in Paris : " Rares à Paris ; les mouvements des terrains, dans ces dernières années, en ont cependant rendu, je vous le disais tout à l'heure, les exemples un peu plus fréquents " (Clinique Médicale, Tome Troisième). The same remarks apply to New York. Prof. Metcalf, in a note to me, says : " I have seen a great deal of trouble from ataxic malarial poisoning. . . . I well remember the time, comparatively speaking, when we had no such 'wild beast' to fight against." A recent writer expresses the opinion that the marsh fevers are sometimes produced by the cultivation of house plants, but it is more probable that when produced in this city and appearing in our residences, it is more frequently the result of upturning the soil and excavating for building purposes. Physicians of experience have stated that, formerly, work upon the Central Park increased the amount of malarial disease in its vicinity, and there are those who hold that the recent growth of shade trees has a tendency to increase or rather restore malaria in the section of the city occupied by the Park, near which our case occurred, for in this part of the Island, in olden times, intermittent and remittent fevers were common. I am not aware that any other members of the family except our patient and the wet-nurse suffered from malarial disease ; but they were more frequently away from the house, and in the open air, than these two.



2d. The disease appeared to commence, or at least its premonitory symptoms, as soon as the patient became weakened, and her power of resistance to noxious agencies diminished by her protracted labor. The pulse, we have seen, rose above 100 before the termination of labor, and remained constantly accelerated till death, and the temperature, when first taken after her confinement, was above normal, and it remained constantly so unless in one of the remissions, after a profuse perspiration and cooling of the surface, when the thermometer in the axilla indicated apyrexia; but had the buccal, vaginal, or rectal temperature been taken at that time, it seems to me not improbable that it would have been found above normal.

The first of the many rigors occurred forty-three hours after confinement, and of course it is very important as regards diagnosis, to determine whether this initial symptom was the result of malarial or septic poisoning. Eight hours previously to the chill, and about thirty-five hours after the birth of the child, I had been summoned on account of the abundant flow of pure fresh blood from the uterus, which, it seemed to me, thoroughly washed out the uterine cavity, especially as a mass of fresh-looking clots was also expelled. With such a history, it appears very improbable that the chill was due to septic poisoning, since a longer time than eight hours would be required for retained clots or lochia to be decomposed so as to poison the system.

The disease, as has been stated, came on gradually and with gradual increase in symptoms, so that four or five days elapsed before the symptoms were sufficiently grave to indicate danger. We see a close resemblance in the mode of commencement to the following statement by Hertz (Ziemssen's *Encyclop.*, vol. ii.) in reference to pernicious malarial fever. "The pernicious symptoms rarely accompany the first attack, usually appearing with the second or third paroxysm, or after several paroxysms of a simple character have supervened. The simple forms gradually pass into the pernicious by a progressive aggravation of their symptoms."

I have no explanation for the occurrence of the syncopal or epileptiform attack at the close of labor. Without undue hemorrhage, with pulse of tolerable strength and fulness, immediately before and afterwards, its occurrence was certainly sur-

prising, but that it did occur recalls to mind the fact that writers mention a form of pernicious malarial fever in which such attacks are common. Hertz says: "The eclamptic form is found mostly among children and puerperal women, and often begins, as does the epileptic form, with headache," etc. Trousseau also relates a remarkable case of malarial disease, in which syncope was so prolonged as to simulate death.

3d. The total absence of any symptoms of local disease during the long period of eighteen days, indicated a malady primarily and entirely constitutional; in other words, one of a malarial nature rather than one that originated in some morbid condition of the uterine system. The lochia were never offensive and were normal in quantity and appearance; tongue moist and covered with a light fur; the return of the uterine system to the normal state, after labor, progressive and complete. There are, it is true, local causes of pyemia or septicemia, but in a great majority of cases, when the disease has continued two weeks, some evidence occurs of a local cause of the fever.

It may be asked, why, if the case which has been related were malarial remittent fever, the disease disappeared at this time, and had the pernicious type, which is comparatively rare in our climate, and why it was not controlled by such large doses of quinine. In answer to this, we may quote the remarks of Emanuel Goth, of Germany, who says: "Very frequently women fall ill of malaria in the puerperal condition, who were well during pregnancy, and the malaria is often of a severe type. Puerperæ possess a great disposition to malaria, even those who formerly successfully resisted the disease. It even happens that women, who never suffer from malaria, are affected by it only during their lying-in period." (*Zeit. f. Geb. u. Gyn.*, vi., i.)

We know that children have much less power to resist morbid influences than is possessed by adults. Hence intermittent fever in them is more severe and dangerous than in their seniors. In infants it is usually quotidian, instead of tertian, the febrile stage is long, and dangerous symptoms, as eclampsia, are apt to occur in the paroxysm. Now, women, when their systems are in a reduced and weakened state after parturition, appear to have the liability to disease to a certain extent which characterizes childhood.

My experience has been, with all fevers originating from bad air, marsh fevers as well as typhoid fever that when apyrexia does not occur in the course of the fever, but only remissions, quinine will not arrest the attack at once, but only moderates the febrile movement. The disease will, to use the common expression, run its course. If a distinct apyrexia do occur, then quinine acts usually promptly and efficiently. Nevertheless there appear to be cases, even with apyrexia, which quinine does not arrest. Dr. W. F. Smith, of Airville, Pa., says (*Phil. Med. and Surg. Reporter*, February 11th, 1882): "I have met with many cases this season, which commenced with a chill every afternoon, followed by a temperature of 104° or 105° in the evening. The next morning it would be normal, and with all the anti-malarial remedies used, the chills would continue for ten days or more when they would gradually cease, and the fever become continuous with all the symptoms of typhoid fever, even the rose-colored spots, bronchial trouble, tympanites, and diarrhea." The writer designates the disease typho-malarial fever. The cases which he observed certainly bore a close resemblance to the one which we are considering, and the statement which he makes, that all the anti-malarial remedies used did not check the disease, is especially interesting. The literature of puerperal malarial fever is meagre. The most complete and instructive monograph relating to it, so far as I am aware, was published in the *AMERICAN JOURNAL OF OBSTETRICS*, April, 1880, by Prof. Fordyce Barker. The history of one of the cases related by him, and occurring in the practice of Dr. Wm. H. Hall, of this city, resembled our case in its leading features.

A primipara, aged twenty-five years, had previously to her confinement resided in a malarial locality in Westchester County, and some years before, when in Italy, had had the Roman fever. Her labor was normal, nothing unusual occurred during her convalescence, and she was discharged apparently well on the tenth day. Three days subsequently, or thirteen days after the birth of the child, at about 2 P.M., she had a severe chill, and Dr. Hall immediately summoned prescribed quinine, so that thirty grains were given within a short time. This was followed by an abatement of the fever. On the following day, in the afternoon, another chill occurred, and twenty grains of quinine were administered "and the same dose was repeated the next morning and evening," but the fever continued until the third night. After the third



day ten grains of quinine were administered every eight hours, and the intervals between the chills were increased. Their recurrence was only postponed for a few hours, but not prevented, and in a few days this agent, though increased to fifty grains a day, failed to produce any appreciable controlling effect on the paroxysms. The chills, fever, and sweating occurred each day, till finally, on the forty-seventh day after her confinement, the patient died exhausted. In the last part of her sickness Warburg's tincture was also employed, and though it was manifestly of some service, postponing for a time, it did not prevent the paroxysms.

Cases like the above show that quinine, antidotal as its action is to the malarial poison, is not an invariable specific. There is a certain form of malarial disease in the puerperal state, or a certain condition of system developed in the puerperal state, in which this agent does not have its usual efficacy, and that substitute for it in pernicious cases, Warburg's tincture, which in India, where pernicious fevers are common, is widely known and recommended, and has been found useful in this country, also fails to arrest the malady.

It is known by the profession, and laity also, that a subtle poison sometimes attaches to the clothes and person of the physician or nurse, which produces a fever in the puerperal woman; but the fever thus caused has, I think, usually a continued rather than a remittent type. Cases may be more common than is usually believed of the communication of various infectious maladies to parturient women through the persons or clothing of attendants. It has come to my knowledge that a physician of this city, in whose family scarlet fever was occurring, and who was several hours each day with his sick children, attended three women in succession in their confinement, and all took scarlet fever. It is believed also to be hazardous for a practitioner to go directly from a diphtheritic patient to a parturient woman. But the specific principle of ordinary infectious puerperal fever, subtle and unknown, probably a micro-organism, appears to attach itself more firmly, and infect for a longer time, the person and clothing of physician or nurse than does that of scarlet fever or diphtheria. In the case which we have been considering, however, there was probably no contagious principle, for on May 20th, two days prior to the confinement of our patient, I attended a multipara who convalesced without an untoward symptom, though two

weeks afterwards she had a dysenteric attack from which she recovered slowly. On May 25th, 26th, and June 3d, I attended, wholly or in part, three other cases, no one of which exhibited any untoward symptoms. Still six weeks previously I had visited, in the practice of a midwife, a genuine case of severe septic puerperal fever, which presented the type of a continued fever, and two months previously I had had a case of apparent septic poisoning in my own obstetrical practice. Therefore, in the case now under consideration, there can, I think, be no reasonable doubt that the cause was atmospheric.

In the *British Med. Jour.* for March 10th, 1882, Dr. J. C. Ferrier, of London, relates of two cases of fever, occurring in parturient women, one of which resembled in symptoms the case which I have related, terminating fatally one month and six days after confinement. The cause in both instances is believed to have been the inhalation of sewer gas, and the fever in both patients appeared to begin in the last days of pregnancy, continuing and becoming more severe after parturition. In the case which resembled the one which we have been considering, severe rigors occurred nearly every day, and the lochia were not offensive. It seems not improbable, in view of all the facts, that exposure to sewer gas, as well as to the exhalations from polluted soil, may impress an ataxic character on fever due to marsh miasm, so as to justify the expression, "typho-malarial," which has been applied to marsh fevers when they assume a markedly adynamic type.

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#### INDUCED ABORTION AS A LAST RESORT IN THE VOMITING OF PREGNANCY.

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REPORTED BY

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THE vomiting of pregnancy, although not ordinarily of grave prognosis, may now and then become so, as unfortunately many an able and conscientious practitioner can testify.

A case which has come under my own observation, in which death seemed inevitable, and may, I think, be said to have

been averted by operative interference, seems to me to be well worthy of a report.

I have had little leisure or opportunity to consult authorities upon the subject, but have found Leishman's remarks very pertinent. He says: "The conclusion at which Cazeaux and others have arrived is, that under no circumstances are we justified in inducing premature labor for the relief of the vomiting of pregnancy; but to this we cannot assent, although we admit that cases which would warrant the operation are of extremely rare occurrence." He cites M. Dance, Dubois, Tyler Smith, Desormeaux, and others as authorities, some advising and others condemning the induction of premature labor.

In summing up, Leishman says: "A review of such facts as these (cases of the observers already mentioned) should certainly lead us to use the greatest caution where the question of premature labor comes in such cases under our consideration. The special circumstances which attend each case should be taken anxiously into consideration, and our verdict must depend mainly upon these, but in full view of the experience of the past."

Mrs. I. R. M., aged 23. Called to see her evening of February 26th, 1881. Found my patient vomiting profusely; temperature 98.5° F.; palpitation of heart with extreme dyspnea; menses five or six weeks absent. The usual treatment of ice, bismuth, milk, and lime-water, etc., failed utterly, and we abandoned all attempts at medication or nourishment per os, and symptoms were successfully combated by rectal injections of beef-tea, brandy, digitalis, and nux vomica. No menstrual flux returning, we had no hesitancy in pronouncing it a case of pregnancy, with vomiting from reflex irritation. From this time until the first week in April, improvement gradually took place, although returns of nausea and vomiting occasionally occurred, which rendered a return to rectal alimentation necessary. During this time attacks of rigidity and unconsciousness, occurring mainly at night, became frequent and annoying.

These would continue from five minutes to two hours, and it is doubtful if the most vigorous efforts much abbreviated their duration or intensity. From their nocturnal occurrence, absence of frothing, and injury to the tongue, these were supposed to be attacks of *petit mal*, which diagnosis was afterwards confirmed by Prof. Mundé at Dartmouth College.

About 9th of April, patient was so much improved as to sit up and to eat sparingly, when vomiting suddenly came on again, all the known remedies, such as nux vom., ipecac., chloral, tr. iodine, Fowler's solution, nitro-muriatic acid, bismuth, pepsin, etc., etc.,



were unsuccessfully employed. The remedy *par excellence* was the hypodermic injection of morphia.

April 27th. Dr. S. D. Wiswell, of Cabot, very kindly visited the case with me, and approved of diagnosis and treatment, and as the third month was then nearly or quite completed, predicted improvement within a very few weeks.

May 5th. I applied nitrate of silver to the cervix freely, and for twenty-four hours there seemed to be a beneficial effect. Friday noon another attack of *petit mal* and continued vomiting; left patient in an exhausted and very critical condition. I urged the husband that the only hope in the case was an immediate expulsion of the uterine contents, and that this was at best but a forlorn hope. This opinion was approved and urged Saturday morning by Drs. G. B. Bullard and J. D. Folsome, of St. Johnsbury. At 2 P.M. of the same day I was summoned in great haste to find Mrs. M. just regaining her consciousness, vomiting incessantly a glairy mucus, although nothing had been taken into the stomach for more than two weeks. Believing that previous use had established a certain amount of toleration, I immediately injected one grain by weight of morphia, in half an hour another half grain, and in half an hour another half grain, making two grains by weight in the hour.

The effect was very happy; vomiting ceased, and patient fell asleep, the first for forty-eight hours.

Dr. Bullard came at 5 o'clock, and after informing the friends that we considered the case well-nigh hopeless, we prepared for action. At 7 P.M., we threw an ounce of tepid water through a catheter into the uterine cavity, and at the same time gave a rectal injection of thirty grains of chloral.

A good night followed, with no epileptic attacks.

Sunday, P.M., no pains succeeding, we injected another ounce of water; in so doing ruptured the membranes, five or six ounces of liquor amnii escaping.

A few labor pains ensued, but with thirty grains of chloral she passed another comfortable night. Labor commenced in earnest at 1 P.M. Monday, May 9th, and all seemed going well until about 5. She then commenced to faint after each pain, and it became increasingly difficult to arouse her. Little dilatation having taken place, I ordered a copious injection of water as warm as could be borne. This so exhausted the patient that she seemed *in extremis*. Rallying, by repeated hypodermic injections of brandy and liquor ergotæ, at 11 P.M., I found the os dilated to the size of a silver half-dollar. Dilating it as rapidly as possible, in about ten minutes I delivered the fetus, breech presenting, immediately followed by placenta, with but little difficulty.

No symptoms of fainting again occurred, and patient immediately commenced to take cracked ice and brandy, with no return of nausea.

The after-treatment was as usual in such cases, and needs no

mention. Mrs. M. had a tedious convalescence, and has since had irregular attacks of *petit mal*, although treated with full doses of bromides, bromidia, nitro-glycerin, etc.

At present she is in tolerable health, attending to her household duties, and I cannot believe but that she owes her life to the induced abortion, the opinion also of my consulting physicians.

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## GENITO-REFLEX NEUROSIS IN THE FEMALE.

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BY

C. H. OHR, M.D.,

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(Continued from p. 64.)

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*Hystero-epilepsy*.—Much has been said and written on both subjects embraced in this appellation, and the subjects of hysteria and epilepsy have produced an amount of literature which displays a vast deal of labor and learning, the outcome of which is best characterized by the Irishman's definition of metaphysics, to wit: "making a dark subject darker." One, perhaps, of the greatest obstacles which retards our progress towards ultimate truth lies in an inherent antipathy to, or obstinacy against, a change of old names and antiquated ideas.

In treating this subject, it is not my intention to follow Jolly and his compeers in their latitudinarian application of the term hysteria. Believing that words were intended to convey ideas, and not to conceal them, and believing also that such a disease as hysteria is not a mere phantom, I shall use the term in a more restricted sense, and confine its application to manifestations, arising from abnormalities of the uterus and its appendages, functional or organic.

Although Shakespear makes King Lear the subject of hysteria, he has a more correct appreciation of what should be its nosological character when he puts into his mouth the words: "Oh, how this *mother* swells up towards my heart! *Hysterica passio*! Down, thou climbing sorrow, thy element 's below," than is betrayed by more modern writers in placing men among its subjects. If the injunction of "Down, thy element 's below" had been accepted and adopted by succeeding medical

writers, much of the mystification which now surrounds this subject might have been avoided, and the similia, in men, of some of its phenomena might have been traced to their proper source. The definition, "*neurosis de la génération*," given by Pinel is suggestive. That erotic passions, which are common to both sexes, not indulged or *mal*-indulged, should give rise to maladies in one sex, known to the profession, having no corresponding evil results in the other, is a proposition not sustained by the observation of the general practitioner who is frequently brought in contact with the results of masturbation.

It is a matter of regret that recent writers, who may be considered as authority (if that were a thing possible) in medicine, shackled by antiquated custom, have given the weight of their names to the continuance of this mysticism, and thus been unable to give a clear and correct etiology of hysteria and to give a common opinion as to who are its subjects. One of these defines it as "a functional affection with many phases, connected by a common underlying pathological condition," a declaration which bears on its face the semblance of reason, but for the *dictum* following closely on its heels that the name hysteria is "singularly inappropriate." "It implies that the affection is peculiar to women, which is by far from the truth." If there is a functional affection with manifold phases connected by a common underlying pathological condition which can be traced to the uterus in changes, organic or functional, the name hysteria, if confined to such conditions, is not "inapplicable," though it may not be the most felicitous. Another writer,<sup>2</sup> who antedates the one just referred to only one year, admits that hysterical "fits" assume a great variety of "forms," and says: "The emotional disturbance in hysteria is perhaps the most important feature; it is practically confined to the female sex." The practical application of names, the proper location of morbid changes, and the true character of such changes, functional or organic, is of far greater importance than fine-spun theories or old ideas, whose greatest merit is in their antiquity.

Acknowledging such a faith, my intention is to speak of hysteria in its "manifold phases" as a disease peculiar to the

<sup>1</sup> Flint's Clinical Medicine.

<sup>2</sup> Finlayson's Clinical Diagnosis.



female sex, and as being dependent on some abnormal condition of the uterus and its appendages, and not recognizing various spasmodic, hypochondriac, and similar exhibitions in males or females as hysterical unless they can be connected with uterine conditions.

Hystero-epilepsy, as a form of epilepsy, has long been recognized by the profession as a distinct disease, and dependent upon uterine derangements of various kinds. Charcot, in his Lecture XIII.,<sup>1</sup> presents much valuable information on this subject, and treats of it under several subdivisions, which it is not my intention to quote or follow, but to confine myself to one of them, a form of epilepsy developed by and dependent on uterine lesion, and thus, strictly speaking, hystero-epilepsy, a purely reflex neurosis.

Without discussing the subject of epileptic zones, my purpose is to exhibit an exciting cause but little recognized by writers on this subject. Stenosis has been advanced as an exciting cause of eclampsia; it is now offered as an exciting cause in hystero-epilepsy, as shown in a *post-mortem* case of great interest.

Miss L., age twenty-nine years, of medium size, dark complexion, eyes, and hair, had always been a healthy child; commenced to menstruate between her fourteenth and fifteenth year. The period was attended by no unusual or notable symptoms, but was perfectly natural; the second made its appearance at the regular time, and was, like the first one, natural, and attended by no unusual symptoms; but on the day after its appearance, she got her feet wet in cold water, in consequence of which the discharge was suppressed, and one or two days after she was seized with "*spasms*." She being absent from home on a visit at the time of these occurrences, no clear and reliable information as to the nature of this attack could be obtained. Let me here say that the history of this case was obtained from the mother, a sensible and intelligent woman, after the death of the child, who had at no time been my patient; but from several interviews with the mother after the post-mortem, the history detailed, and to be given, received my entire confidence as to its fulness and clearness. Whatever may have been the nature of this attack, it was so slight that no attention was paid to it at the time, and it probably would have been forgotten had not subsequent events recalled and perpetuated its occurrence. Between her second and suppressed period six months elapsed before the appearance of the third, and during this time there does not appear to have been

any notable disturbance of the general health. The mother described her as being very uncomplaining and tolerant of pain, and during that six months as being as good as usual.

The third period occurred spontaneously, but accompanied by pain and suffering. The discharge was slight, dark-brown, and gravelly, "looking exactly like coffee-grounds," and disappeared the second day, and was followed by a convulsion. From this time on, the catamenia were periodically continuous, but irregular, appearing between four and six weeks apart, but were always accompanied by pain and epileptic convulsions. In the early history of the case, the pain was located in the iliac regions, which, in the progress of years, intensified, and extended to the pubic regions. This extension of pain, according to the history, appears to have taken place during the last six years of her life, and from that time her sufferings were greatly increased, her mental faculties became impaired. Heretofore she had been sociable, cheerful, kind, and considerate toward others during the catamenial intervals; she now became despondent, indifferent, morose, and, during the last year or two, impatient of control from her mother. She was habitually constipated even before her menstruation commenced. The epileptic seizures were nearly always in the night, rarely occurring in day-time, and never during the menstrual flow, but always preceding or after it within a day or two.

As much stress has been, by some writers, placed on the "*aura epileptica*" as a diagnostic symptom of the disease, and as it probably is never wholly absent in some shape, it may be well to give the peculiar "*aura*" or premonitory symptom presented in this case; it is one which would probably not have been observed by any except a mother's eye. Pushing my inquiries closely on this subject, it was elicited from the mother in the declaration that she could tell the approach of the menstrual period by "a peculiar brightness of the right eye," and the daughter, usually a sound sleeper, would, before the epileptic attack, be harassed by fearful dreams.

She had been under the care of a number of physicians both at home and abroad, but without relief. I had never seen her professionally until three days before her death, when I was called in consultation, and beheld a wasted, miserable, bruised, battered, raving maniac, tied hand and foot, bound down to her bed, to prevent self-destruction. Under such circumstances, a pathological diagnosis was impossible and improper; the prognosis was patent, death inevitable and impending. The history of the case has been given according to my information as obtained before and after death, which showed that a few days previous to my visit she had passed a menstrual period, followed by an epileptic seizure and mania. After death, the mother requested me to make a post-mortem, giving as her reason that for the last five or six years the father had exhibited symptoms somewhat like those of the daughter, and she wished it for his benefit, if it could throw any light on his case which, so far as my information went,

was that it was what Trousseau described under the appellation "*Vertigo a stomacho læso.*"

The *post-mortem* was confined to the head and generative organs, and exhibited the following results: The coverings of the brain gave evidences of congestion, the sinuses and smaller vessels being turgid with dark blood; there was no evidence of plastic or tubercular deposits; the substance of the brain exhibited similar evidences of congestion, the blood oozing from numerous points on section; the ventricles contained a considerable quantity of bloody-colored serum; there was nowhere found any plastic, granular, or other deposit or formation, and in every other respect the brain appeared to be in a sound condition. The uterus was small, dark-colored, apparently from congestion, hard and firm to the touch; the os was exceedingly small and contracted; the ovaries were rather small, rounded, and even in appearance, hard, and darkened, in color, evidently from congestion; the uterus and ovaries were in their normal positions. The Fallopian tubes were small in circumference, and the lumen so much contracted as not to admit the introduction of a small bristle into the uterine cavity; the timbrated extremity of the one on the right side was attached to the face of the right ovary by a filament of coagulated blood adhering to a cavity from which an ovum had apparently escaped; the coagulum was nearly an inch in length, and little more than a sixteenth at its greatest diameter. On laying open the cervix and body of the uterus, both cavities were found to contain a considerable quantity of a bran-like substance, probably consisting of epithelium and broken-down blood-corpuscles; the cervical canal was very small and tortuous.

The microscopic examination of the sections was made by Dr. T. M. Healy, who reported as follows:

"1st. The os externum and portion of the cervix: *a.* Immediately at the os, beneath the vaginal mucous membrane, which is healthy, appears an unusually thick layer of densely-felted connective tissue sending down large trabeculæ into the circular fascicular fibres of the sphincter; the mucous membrane of the cervix is much thickened, and in such a state of cloudy swelling as to present very few outlines. *b.* Above the external sphincter the layer of connective tissue still obtains and sends down large processes that finally are lost in the muscular tissue, which is condensed and illy-developed in this, as in the foregoing section.

2d. *Body of the uterus.*—Beneath the peritoneum a thick layer of connective tissue prevails. The longitudinal muscular coat is badly developed; the layer of connective tissue between it and the middle coat is thick and denser than normal. The inner muscular layer is cloudy, the outlines of the muscle-bundles illy-defined, and forms the inner wall of the uterus. The utricular glands are few in number, as are the embryonic muscle-cells.

3d. *Ovaries.*—Cortical layer thin and dense; inner or vascular portion shows more than the normal amount of densely-matted and less of the open trabecular connective-tissue cells than



normal. The ova are illy-developed, and filled with granular matter, and show the nucleus faintly, and the nucleolus not at all, in many cases. As might be expected from the time at which the specimen was obtained, the blood-vessels of the ovary are very large, tortuous, and clearly defined. The general appearance of the various sections made show that the ovaries are as poorly developed microscopically as they are macroscopically, or that more yielding or plastic elements had undergone more or less change from the pressure of the abnormal amount of dense connective tissue."

A post-mortem in a case resembling the above, reported by M. Villermay, and frequently referred to by writers on this subject, is too meagre in its details, and does not appear to have been directed to all the points requisite to develop the whole pathology of the case. It is here referred to only as to one point, and that is as to the "ovaries very *large* and very *firm*, and enveloped in a *partially* transparent tunic."<sup>1</sup> So far as it goes, it appears to me to corroborate the theory of stenosis as more fully shown in the case of Miss L., the autopsy in which was made October 30th, 1879.

The sudden suppression of the menstrual flow was followed by inflammatory action in the one case of the very large and very firm ovary and its partially transparent, partially opaque envelope, and in the chronic case by the plastic deposits which so materially altered the structure and form of the uterus and ovaries. The dense connective tissue developed in the case of Miss L., acting on the nervous filaments, as was done in Gross's case of facial neuralgia in the maxillary bone, was the source of the reflex nervous action culminating in the epileptic paroxysm. The connection of ovulation, menstruation, and epilepsy are in too direct proximity to admit any reasonable doubt as to the causation. If any other post-mortem has been made in which the physical and microscopical changes have been as fully and minutely observed and described as in this case of Miss L., it has not come within my reading, and therefore living cases with practical results must be adduced in confirmation of the theory of stenosis as a cause of epileptoid phenomena by reflex nervous action.

Miss M. came under my care February, 1880, as being subject to "fainting spells," which occurred most frequently during her

<sup>1</sup>Cyclopedia by Tweedie, Forbes, and Dunglison, Article Hysteria.

sleep and rarely during her waking hours, and were generally traced to times of unusual exertion and fatigue. There was loss of consciousness during the attack, with (next morning) a sore tongue, which had been bitten, and great soreness of the muscles of the limbs, which lasted several days. She was of a nervous temperament, not despondent, but excitable, energetic and plucky. Investigation elicited the fact that her menstrual function was in an abnormal condition. She came regularly under treatment in September, 1880, having the day previous suffered two attacks in tolerably quick succession, consequent on severe exertion and excitement. On examination with the speculum, there appeared a slight erosion of the os and considerable congestion of the cervix, with a plug of glairy viscid mucous membrane protruding therefrom and anteversion of the uterus. A Simpson's sound passed less than an inch into the cervix, but by careful and patient perseverance a No. 2 gum bougie was passed into the cavity of the uterus and up to the fundus. After repeated attempts at dilations and treatment of the erosion, a No. 12 bougie was successfully passed, the uterus straightened up, and a stem pessary was introduced. This was removed a day or two before the menstrual period, lest it might obstruct the flow, and a few days after the cessation an examination discovered the return of the flexion, which was again straightened with the No. 12 bougie and the introduction of the stem. This was permitted to remain until after the patient had passed two periods, which came at the regular time and without any difficulty. Two years have elapsed since this treatment, with but two returns of the former "spells," both of which occurred under circumstances of great excitement and anxiety.

It is perhaps proper for me to say that my bougies are armed with stylets made of softened copper wire and of different sizes to suit the bougie. The stems I make out of the backs of vulcanized rubber combs, a trifle shorter than the depth of the uterine cavity, to prevent pressure against the fundus; they are made slightly larger at the uterine extremity and of a flattened oval shape, to conform more nearly to the uterine cavity, and have at the vaginal end a disc about five-eighths of an inch in diameter, made of a vulcanized rubber flat ruler.

A recent case, very similar to the above, occurred in the London Hospital under the care of Dr. Sansom, and is published in the *Lancet* for March, 1881. A similar line of treatment, so far as the stenosed condition was concerned, was adopted in both cases, but in my case the process of dilatation did not excite a fit. My practice is to smear the end of the bougie well with an ointment composed of sixty grains of ext. belladonna and half an ounce of cosmoline, allowing each

bougie to remain in position a few minutes. Stenosis was recognized as the important factor in these cases, and may be found in many others presenting a variety of distressing symptoms, and giving rise to unpleasant apprehensions and useless distress. As an example take the following case :

Miss E., æt. 35, of good size and proportionate form, black hair and gray eyes, came under my care in December, 1879, suffering from severe cough, profuse expectoration, supposed to be consumption; had been three years under the treatment of a disciple of Hahnemann. At my first visit she was confined to bed very much emaciated; had passed a very uncomfortable night; had commenced to cough about two o'clock in the morning, which had continued without cessation to the time of my visit; there was no febrile excitement, but the skin was dry and harsh, the cough semi-croupous, the respiration asthmatic; auscultation indicated no pulmonary lesion nor heart change, though she at times suffered from palpitation; there were symptoms of gastric disturbances, want of appetite, flatulent eructations, a sense of weight and uneasiness after eating, etc.; bowels torpid, with at times distressing borborygmus. Interrogations regarding the menstrual function were met with prompt and positive denials. The history of the case for the ensuing four months differed but little from the above, and to give it would be unprofitable as well as tedious. Suffice it to say that with the approach of spring there came a gradual amelioration of her condition, and during the summer I did not see her except occasionally on the streets.

In November she again sent for me, suffering as on the former occasion, except that all her symptoms were more aggravated. "She had taken cold." After several months of ineffectual treatment, during which time I was frequently hastily sent for with the information that she was dying, was very weak, could not get her breath, other symptoms began to manifest themselves of a more dangerous tendency, more clearly indicating to me the existence of uterine derangement as the true etiological condition. She became troubled with pruritus pudendi, which ultimately extended over the entire skin from head to foot; she had become a sleep walker, and at length had spells of mental aberration. In the mean time I had again directed my inquiries to the menstruation, and with much difficulty elicited the fact that the catamenia had always been more or less painful. When the pruritus first appeared, with the acknowledgment of some leucorrhea, an examination was again proposed and positively refused. The paroxysms having now increased in frequency, in duration and in intensity, affecting head, chest, abdomen and skin, I demanded a vaginal examination, and after reasoning with her, ineffectually for some time, informed her in positive terms that it must be made then and there or that would be my last visit. This brought her submission; a digital examination was attempted, but the finger had barely passed the sphincter when severe pain was mani-



fested by a scream, and forbade further progress; a high degree of heat was, however, discovered. Injections of zinc, boracic acid, atropia, morphia, etc., were used without apparent benefit, as were also external lotions of various kinds, including Seanzoni's vapor of chloroform to the vulva. Under the use of iodoform suppositories, the extreme sensibility was at last sufficiently reduced to admit the introduction of the finger. Several ineffectual attempts were made to introduce the speculum and treat her at home, when I required her to be brought to my private office, where, under the use of chloroform, the speculum was introduced. The vagina presented an intensely red and granular appearance, as did also the cervix uteri, the os was too much contracted to admit the introduction of a Simpson sound; the parts were mopped with a ten per cent solution of carbolic acid, which was increased to fifteen per cent before the vaginitis disappeared, and with it the pruritus also diminished.

The process of dilatation was then commenced with a No. 1 bougie, and after a number of sittings a No. 10 could be introduced easily and without pain. At her first visit to me she was so much debilitated that she had to be carried to the carriage, and from it to my operating table; at her last, when the dilating process was deemed sufficient, she had so far recovered as to be able to walk without assistance. Being much emaciated and debilitated, she was now put upon Weir Mitchell's milk and massage plan, with the daily use of electricity. The patient is well and has for the last ten months enjoyed good health and spirits.

This case was a second edition, somewhat enlarged, if not improved, of the "hystero-neuroses" described in the very valuable paper of Dr. Engelmann, of St. Louis, published in the second volume of the Transactions of the American Gynecological Society, and to which the reader is referred for a more full description of this case, which passed through all the phases described by him therein.

He has so nearly accounted for these phenomena and so nearly announced the theory of stenosis herein announced and advocated, that it is requisite for me to quote the following extract in explanation of the conclusions at which I have arrived from the labors of others and my own observation: "The termination of the nerves supplying the female sexual organs and their radiation is *too little* known to enable us to explain the causative connection between these organs so distinct in function and location; *possibly* the reflex irritation of the stomach *may be* due to pressure upon the nerve terminations within the uterine tissue, caused by congestion of that organ, or to the distention of its peritoneal covering, owing to

its enlargement." I have italicized certain words which, if omitted and *positive* ones substituted in their stead, very fully define the theory of stenosis herein advocated, and in my judgment it is fully sustained by the cases cited and of frequent occurrence in daily practice.

Great as is the mystery involving the actions of the nervous system of man, anatomical research has probably revealed sufficient for the practical purposes connected with the subject under consideration. These reflexes are evidently made through the medium of the ganglionic system of nerves, and to it we must look for the solution of these manifestations. This system has its first ganglion within the cranial cavity and its last at the coccygeal extremity, and between these points there are numerous ganglia, each sending filaments or ramifications to its appropriate organ, constituting an essential to organic life.

For our purpose it will be sufficient to begin with the solar plexus from which "different plexuses are given off, which pass to the kidneys, supra-renal capsules, the testes in the male and the ovaries in the female, the intestines by the superior and inferior mesenteric plexuses." The four or five sacral ganglia are connected with the ganglia above and with each other. The inferior hypogastric or pelvic plexus is a continuation of the hypogastric plexus above, and receives a few filaments from the sacral ganglia. The most interesting branches from this plexus are the uterine nerves, which go to the uterus and the Fallopian tubes."<sup>1</sup>

If we will bear in mind that this system is nerve-tissue, extending from cranium to coccyx, presiding over and controlling by its branches, which are sent to every part what constitutes and is essential to organic life and action, it will be less difficult for us to comprehend how the effect of irritation existing in one organ may be communicated to another distinct in function and distant in location. A knowledge of the *how* this irritation is communicated from one point to another is important and essential to rational deduction. A knowledge of the *why*, or the doctrine of election, is not so important or essential to correct and rational treatment. Let me not be understood as advocating inaction or the restraint of mind in the investigation of *why* as well as *how* cause produces effect; for the

<sup>1</sup> Flint's Physiology, vol. iv., p. 442, *et seq.*

higher the mind of man attains and the nearer it arrives to the knowledge of final truth, the nearer it approaches to the image and likeness of the great Creator and the more does it increase its power of usefulness to its fellows. By careful, earnest, and untiring investigation we may hope to obtain the knowledge, not only how, but also why impressions made on one portion of the system excite responsive action in another.

It is acknowledged as a fact that an injury inflicted by a cut or burn on the skin of a leg or arm is in some cases the exciting cause of epileptic seizures, and this fact is explained on the theory of an injury to a peripheral nerve filament. We know that a gunshot or punctured wound inflicted on a foot, a toe, or finger will give rise to tetanic spasms, and account for it on the principle of reflex irritation. We know that stone in the bladder is a frequent cause of pain at the distal extremity of that tissue, or in the testes, or passing down the thigh in the course of the femoral artery. I know this reflex nervous action from individual, personal experience, acquired twelve years since by being thrown from a buggy, resulting in fracture of the neck of the femur and contusion of the sciatic nerve, of which I am reminded by every change in the atmospheric condition. In my case it manifests itself by pain across the tuberosity of the tibia and the tarso-metatarsal junction, and on it I prognosticated, as soon as the bulletins announced that President Garfield complained of pain in his feet, that the bullet had injured the spinal column, manifesting the injury through the sciatic nerve. The post-mortem demonstrated the correctness of the diagnosis. This principle of reflex action presents a wide and as yet imperfectly-explored field to the earnest investigator in search after truths useful to the cure of suffering humanity, as I propose to show by another case, which will be given presently.

A short definition of the term stegnosis or stenosis as herein referred to, as a prominent factor in the production or causation of the diseases herein referred to, may not be inappropriate and lead to a clearer view of the subject. The term is herein used to signify the existence of an abnormal condition of tissues, resulting as a consequence of existing or previously existing congestion or inflammation therein, produced by or producing flexions; or independent of flexions in the uterine



cervix, and from which may result deposits of new tissue, as shown in the post-mortem case herein recited (hyperplasia); or in absorption constricting the tissues around the terminal filaments of the nerves (atrophy). The constriction may be permanent, as in the post-mortem case, in ante, retro, or lateral flexions; or temporary, as in case of pressure produced by the passage of the fetal head. Under such circumstances as these, have I proposed stenosis as a common factor in the production of these reflex neuroses, not as the only and ever-present pathological condition, but as one, more frequently than it has received credit for, exciting troublesome conditions, the character and cause of which are not understood and are misapprehended by many of the profession, as may appear from the following case, which has come to my care whilst writing this paper:

Mrs. A., æt. 26 years, married, has one child 4 years old; resides in Baltimore; applied to me August 11th, 1882; the patient is a blonde of full stature and frame, rather anemic; suffers from great shortness of breath induced on the least exertion, palpitation of the heart and difficulty of locomotion on account of pain it induces in the limbs; there is a murmur attending the contraction of the heart, which otherwise appears to be in a normal condition; the respiratory sounds are clear and uniform; the walk of one hundred and fifty yards has, however, almost exhausted her; she is dyspeptic and despondent. She has been under the treatment of her family physician, a man standing well in the esteem of his professional brethren for ability. Beside that, she had been under the treatment of several other physicians, and among the rest, a disciple of Hahnemann, without relief and without agreement of opinions as to the nature of her disease. Prominent symptoms, presenting differently to each one, have misled them in their diagnosis and treatment, as a matter of course. Imperfect digestion, manifesting its results through the kidneys, has misled one; the anemic condition has misled others in regard to heart and lungs, and no attention has been paid to her uterine condition. Her appearance, her history of the case, and the fact that she was the mother of one child then 4 years old, led me to suspect uterine trouble, and I so informed her. A digital examination confirmed the suspicion, and the speculum revealed a deep-red patch surrounding the os, of the size of a dime, and the sound a stenosed cervical canal. On the 29th of August she was put upon my table, hardly able to endure the recumbent position. The treatment was commenced by the introduction of a No. 3 bougie, which was succeeded by different sizes up to No. 7. Her next visit (September 5th) shows a decided improvement in her locomotion and in her respiration, and her spirits are much

more buoyant, but circumstances requiring her return home, no further treatment was resorted to, and she returned with an account of the discoveries made and what has been done.

The chameleon hues of hysteria are well calculated to deceive and mislead the general practitioner, unless a sharp experience or two on this subject has led him to look with suspicious eyes upon the complaints of females, as has been the lot of the writer. It is a lot to which especially the younger members of the profession are liable, and from which the older ones are not exempt. The writings of the present day continue to perpetuate the difficulties surrounding this subject by a too strong adherence to the beaten track. Let the term hysteria be confined, as it should be, solely to abnormal phenomena connected with and developed by uterine deviations, or pathological conditions, and much will have been accomplished in removing these difficulties.

Much information may be derived from the history and post-mortem in the case of Miss L., and illustrated by the other sample cases herein related, to guard the practitioner against errors in diagnosis and treatment, errors which have been transmitted as heirlooms in medicine and medical writings. Much prominence has been given herein to stenosis as a factor in the production of diseases of almost daily occurrence, but let it not be imagined that it is the sole and universal cause. The prominence given to it is because heretofore it has rarely received recognition or been acknowledged as an etiological condition in any of these reflex neuroses, which themselves are by some considered as medical heresies.

CUMBERLAND, MD., October 9th, 1882.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Stated Meeting of December 7th, 1882 (Continued).*

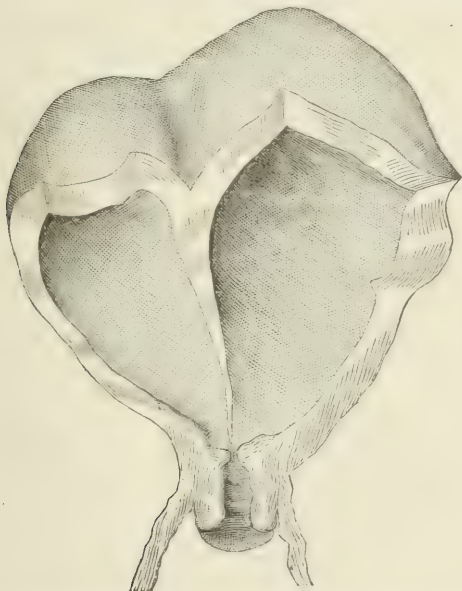
DR. B. F. BAER also read the following:

### A CASE OF UTERUS SUBSEPTUS, COMPLICATING THE THIRD STAGE OF LABOR.

Through the kindness of my friend, Dr. T. Stanton Crowley, I was permitted, on November 29th, 1882, to see the interesting case which I here briefly describe.

Mrs. M. G., æt. 24, was delivered, two hours before I saw her, of her fifth child, after a rather tedious labor, in which the breech presented. The placenta was delivered with some difficulty about half an hour after the expulsion of the child; but the membranes were retained by what was supposed to be an hour-glass contraction of the uterus, or contraction of the internal os.

I found the uterus well contracted, but somewhat irregular in shape, as felt through the hypogastrium. The internal os was contracted closely around a portion of the amniotic sac, which was projecting through it. I gradually passed one finger and then two



through the os, and found that the membranes were pressed upon and retained by a firm substance, which obstructed the passage. After still further dilating, I tried to pass my hand, or as much of it as was necessary to reach the membranes, which I traced to the left cornu. In doing so my thumb was directed to the right, by the obstruction above mentioned, and passed into another cavity, independent, apparently, of the one in which my fingers were. The latter cavity was comparatively large and contained the membranes. My first impression was that I was grasping a fibroid tumor which had been flattened by pressure, or possibly a supplementary placenta, which was detached and lying edgewise, but the result of further investigation proved that it was neither. I next removed the membranes—nearly the whole of the fetal sac—and then made a more thorough examination. Again passing my hand partially into the uterus, whilst with the external hand I made



counter-pressure on the fundus, my fingers entered a comparatively large cavity towards the left. This was rough—placental site—and cylindrical in shape. My thumb, as before, passed to the right and into another cylindrical cavity, small, compared to the left, and smooth. Grasping the septum which separated my thumb and fingers, I found that there was a complete division of the uterine cavity into two unequal parts. The septum was wedge-shaped, with the blade of the wedge below, ending at the internal os, and, therefore, not dividing the cervical cavity. Externally the organ was not perfectly symmetrical and smooth, but at the point opposite the septum a slight depression was felt.

This is the *uterus subseptus unicollis* of Kussmaul, or a uterus which is divided in the cavity of the body only, the septum stopping short at the internal os, not dividing the cervical cavity therefore. The slight sulcus on the external surface makes it approach the form described by the same author as the *uterus bicornis subseptus unicollis*.

I now became interested in the history of the former gestations and labors of our patient, and learned that this was her fourth labor and fifth child.

The first was a twin-pregnancy, and terminated in premature labor in the seventh month. There was an interval of more than an hour between the birth of the first and second child, and another interval of fifteen minutes between the expulsion of the placenta. And they did not have even a membranous connection. Did each cavity have its own independent ovum, therefore? Not necessarily, but it is highly probable, because, as a rule, the placenta of twins have a membranous connection at least, and in those uncommon cases where they are entirely separate, may not each fetus have had its own independent chamber furnished by one of the forms of double uterus?

The second and third gestations went to term, but the labors were both complicated, requiring the aid of the forceps to supplement the imperfect expelling power of the uterus. We can readily understand why the uterine force was not applied to the best advantage on the fetal ellipse in a case of this kind.

The fourth and last labor was complicated in its third stage in a manner which is new to me.

May not some other of the complications of the third stage of labor be due to an undetected malformation of the uterus, resulting from arrested development? For instance, the perfect hour-glass shape which a few observers are sure they have met with. The uterus bicornis subseptus, a form of malformation where the horns diverge, and where a septum extends into the cavity, dividing it into two, furnishes a case in which the finger would encounter a point of constriction before it could enter the cavity containing the placenta; and externally the hand would detect the apparent constriction at the bifurcation of the cornua. But you will answer that bicornate uterus is very rare. So is perfect hour-

glass contraction of the uterus; and the malformation of the uterus might not be so rare as supposed if it were detected in every instance where it exists.

"Busch mentions a case of uterus bicornis septus, in which an exhausting hemorrhage occurred, in consequence of the attachment of the placenta to the septum, which not contracting, the vessels remained open." (Klob.)

This malformation may account for some of the cases of superfetation, and menstruation during the early months of gestation. In this case the catamenia were absent during the whole of every gestation.

DR. R. G. CURTIN had this morning delivered a woman of twins; after the uterus was emptied and well contracted, a strongly marked sulcus could be felt in the fundus.

DR. DRYSDALE has under his care a woman whose uterus is divided by a complete septum.

DR. W. S. STEWART inquired if any previous examination indicated a want of symmetry, or if it resembled an extrauterine pregnancy.

DR. BAER had not seen the patient until after delivery of the child, and did not ask about the point mentioned by Dr. Stewart. Dr. Goodell has reported a case of supposed extrauterine gestation in which labor came on naturally. This type of uterus may seem to be very rare because it is so difficult to recognize. The presence of the septum would never have been suspected in this case had it not been found in the attempt to remove the imprisoned placenta.

DR. HARRIS said that Dr. Goodell was uncertain of the character of the pregnancy, although every diagnostic test but one indicated that it was extrauterine. This exceptional condition was the sensation of muscular contraction in the presumed cyst-wall when the hand was applied to the abdomen. Not being able to reconcile this action with the development of a tubal pregnancy, he determined to trust the case to nature and sent the woman to the Preston Retreat, where she was delivered naturally in a few days. The uterus was double and was twisted on its axis, and the empty cornu was posterior, admitting the sound in the median line as into an empty organ.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

### (ABSTRACT.)

*Meeting, Wednesday, Dec. 6th, 1882.*

DR. J. MATTHEWS DUNCAN, *President, in the Chair.*

#### DECIDUOUS MEMBRANE.

DR. CLEVELAND exhibited a fleshy, finger-like sac, passed forty-eight hours after labor by a patient who, after a former labor, had passed a similar substance, which he had then exhibited to the

Society. After careful search, he had found no trace of a double uterus.

THE PRESIDENT could think of no other origin for such an unbroken decidua than that it came from a uterus bicornis.

DR. WYNN WILLIAMS described a case of double uterus at present under his own care.

#### MICROSCOPIC SECTIONS OF CARCINOMA UTERI.

DR. EDIS showed microscopic sections illustrating his case of malignant disease of the cervix complicating pregnancy. The amount of stroma was small compared with that of the cells, the appearance thus resembling that of medullary cancer.

#### PERIMETRIC ABSCESS.

MR. GRIFFITH showed a specimen of perimetric abscess, situated behind the uterus and left broad ligament, displacing and obstructing the rectum, and opening at three places into the cervix uteri, vagina, and rectum.

#### THE DIRECTIONS OF UTERINE CONTRACTIONS.

DR. GODSON showed a uterus removed by Porro's operation, which demonstrated well the wrinkles on its peritoneal surface caused by the contraction of its muscular fibres underneath.

DR. ROUTH had heard the uterine souffle *per vaginam*, or over the sacrum, in cases in which he had failed to hear it by auscultating the abdomen.

#### RETAINED PLACENTA.

DR. WYNN WILLIAMS exhibited a placenta retained for three months after abortion, and removed by him.

#### FIBROIDS REMOVED BY ABDOMINAL SECTION.

DR. BANTOCK exhibited five specimens of uterine fibroids, weighing respectively 3 lbs., 8 lbs., 13½ lbs., 3 lbs., and 2 lbs., removed by abdominal section. One patient died, four recovered. In each case the pedicle was secured by Koeberlé's *serre-nœud*, upon the value of which Dr. Bantock remarked. He thought that whatever might be the future of oöphorectomy for the cure of fibroids, it could not compete with hysterectomy in cases such as those exhibited, in each of which there were substantial objections to the former operation.

DR. ROBERT BARNES thought fibroids, such as Dr. Bantock had shown, better dealt with by hysterectomy. At present, he inclined to think Battey's operation best suited for hard fibroids in the wall of the uterus and projecting inwards; malignant and myxomatous tumors it was better to extirpate. He could speak from clear observation of the remarkable effect of Battey's operation upon fibroids. Within a year after this operation, he had found a tumor the size of the fist practically gone.

MR. KNOWSLEY THORNTON did not think hysterectomy should be performed for fibroids until oöphorectomy had been tried and



failed. He had done the latter operation ten times; all the patients had recovered, all had been benefited, and in all the uterus had diminished in size, in some to a surprising degree. Not merely the ovaries, but the tubes and the large vessels in the broad ligament ought to be removed.

DR. GODSON corroborated Mr. Thornton's statement as to one of the cases operated on by him.

DR. CHAMPNEYS asked Mr. Thornton in what cases he thought the operation should be done.

MR. THORNTON thought only in cases in which life was threatened.

#### NEW LAMPS.

DR. AVELING exhibited a modification of Swan's incandescent carbon lamp, so made that it could be introduced into cavities of the body for operative or endoscopic purposes.

#### RUPTURED PERINEUM—NEW METHOD OF OPERATING.

A paper upon this subject, by DR. WYNN WILLIAMS, was read. In this operation, the sides of the rent were first denuded in the usual way. Then a flap of elastic tissue, about two-thirds of an inch in width, about two lines in thickness, and long enough, when on the stretch, to reach as high as the denuded surface on the labia, was dissected up from the floor of the vagina. Sutures were then passed through the denuded surfaces, in such a manner as to keep the edges, as well as the flat surface, of this flap in contact with the raw surface. This being done, the sutures were secured in the usual way. When the rupture involved the sphincter ani, the flap was made, and the sutures passed through it in the same way as in the simpler cases, but the rent in the wall of the rectum was sewn up with sutures made to terminate within the bowel, and the deep sutures secured before those bringing the flap into position were tied.

DR. AVELING asked what was Dr. Wynn Williams' practice with regard to the action of the bowels after operation.

DR. BANTOCK objected to the practice of tying the knees together, and also to the use of vaginal injections after operation. He had performed Dr. Wynn Williams' operation once, but was not much impressed by it.

DR. CLEVELAND thought that rupture of the perineum could often be prevented by restraining the too rapid emergence of the child's head, which could be done by judicious counter-pressure.

DR. SAVAGE thought the difference was overlooked between mere tegumentary lesions and rupture extending through the perineal body. In Dr. Williams' operation, a narrow tongue of tegument was reserved in the course of denudation, and plastered over the crevice left after bringing the raw surfaces together. No additional strength resulted from this, because the tongue was merely tegumentary. Early operations were tegumentary, and failed altogether. The perineal body was the centre of attachment of the perineal muscles, and the mainstay of the floor of the pelvis.

DR. ROUTH thought that rupture of the perineum could not always be prevented, and sometimes a slight laceration was not so

great an evil as prolongation of the labor. He had, in early practice, succeeded completely with ordinary sewing needles and thread. He concurred with Dr. Savage's remarks as to the perineal body, but had seen that the perineum made by Dr. Williams' operation was remarkably strong and effective.

MR. KNOWSLEY THORSTON thought this mode of operating gave remarkably good results, but it was not new, having been described by Mr. Teale, of Leeds, and practised by many American surgeons.

DR. MURRAY had seen the operation now described, and thought it gave a firm perineum. It was not always prudent to retard the progress of the head. Laceration of the perineum might often be prevented by making one or two lateral cuts.

DR. CAMPBELL POPE said that primary union might often be obtained by applying a broad strip of plaster to hold the nates together.

DR. EDIS said that rupture might often be prevented by straightening the legs while the head was emerging, and also by making a nick on either side of the perineum. Union might be obtained by operation twelve or twenty-four hours afterwards. It was unnecessary, and rather jeopardized healing, to keep the bowels constipated after operation.

DR. CULVER JAMES had in one case operated immediately after labor with a rather large common household needle, and obtained union.

THE PRESIDENT had seen the results of many methods of operating, and could not say that one was better than another. He had stitched up a perineum two weeks after delivery without denudation or cutting of any kind, and it healed sufficiently.

DR. WYNN WILLIAMS did not confine the bowels after operation. The perineum made without the flap he had described was apt to be too thin. He was not aware that his operation had been described before; it certainly was not alluded to in any work on gynecology.

#### PREGNANCY COMPLICATED WITH CANCER OF THE CERVIX—CESAREAN SECTION—RECOVERY.

This paper, by DR. EDIS, was then read. The patient came to the Middlesex Hospital in November, 1881. She had begun to suffer from pain, hemorrhage and discharge eleven months previously. She presented the signs of six months' pregnancy, and there was epithelioma involving nearly the whole circumference of the cervix and the greater part of the posterior vaginal wall. Palliative treatment was adopted until February, 1882. Labor pains then came on, and the os dilated to the size of a five-shilling piece. It being judged impossible for delivery per vias naturales to take place, Cesarean section was performed by Mr. Morris. The child was born in a state of suspended animation, but recovered. The mother recovered, and when seen in September the disease had made but little progress.

#### TWO CASES OF LABOR COMPLICATED BY CANCER OF THE CERVIX UTERI.

These cases were related in a paper by DR. HERMAN. In the first case the diseased tissue was freely cut away with scissors and the actual cautery, and delivery effected with forceps. A

vesico-vaginal fistula subsequently was formed, then phlebitis, and the patient died on the 18th. The fistula occurred at a spot which the cancer had invaded. In the second case masses of diseased tissue were removed with the *écraseur*, the fingers and scissors, with only trifling hemorrhage, and delivery effected with forceps. The mother recovered well. The author thought that in the management of labor obstructed by cancer the first alternative to be considered should be whether it was not possible to break down, and tear or cut away (the former preferably) the obstructing diseased masses.

DR. BATE had had a case of labor with commencing cancer, in which delivery was effected by natural efforts, but the patient died from septicemia.

DR. CHAMPNEYS said that in these cases it was perhaps most important that there should be healthy tissue at the sides of the cervix, for it was there that lacerations most often occurred.

DR. GALABIN inquired as to the method of suture of the uterus adopted in Dr. Edis' case. He had in four cases of cancer delivered *per vias naturales*, in only one there was great difficulty in doing so; but two of the mothers died; in one of the latter the disease was almost entirely removed with the galvanic cautery.

MR. JENNINGS thought that rupture of the bladder during parturition was not so rare as might be supposed.

DR. FANCOURT BARNES thought that in these cases Cesarean section offered a chance of probable recovery to the mother and certain safety to the child. An important point was that in this operation healthy tissues were cut through, while in natural delivery diseased tissues were torn, thus favoring blood-poisoning.

DR. EDIS said that in his case interrupted sutures of silk-worm gut were used.

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## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

### SECTION IN OBSTETRICS.

*Stated Meeting, December 28th, 1882.*

#### DEFORMITY OF THE PELVIS—INDUCTION OF PREMATURE LABOR.

DR. GRISWOLD reported a case as follows:

In the spring of 1880 he was called to assist two of his professional brethren in a case of difficult labor. The patient was an Irish woman twenty-five years of age, muscular, and well-proportioned, who had been married four years. She had had a still-birth at seven months, and a second still-birth at full term. She had been in active labor three days, the membranes having ruptured early. The pains had been hard, but were very feeble.

The breech was presenting, with the back in the hollow of sacrum. The parts were clammy, and oil or lard failed to remove the rubbing sensation as the fingers were passed into the vagina.



Under chloroform the fetus was delivered. Its surface was macerated, the epidermis peeling off under pressure of the fingers.

The vagino-rectal wall was torn to the distance of three and one-half inches. The parts were cleansed, placed in apposition, and silver wire suture introduced. The bladder was evacuated with a catheter, and frequent carbolyzed vaginal injections were prescribed.

On the second day following delivery, the nates were found excoriated, and the right labium presented a blistered appearance. On the fourth day, erysipelas was ushered in with a chill. Around each suture a slough was forming, and they were removed. The woman recovered in about two weeks with the loss of a portion of the vagino-rectal wall. The cause of the difficult labor was found to be in the narrowing of the diameter between the rami and an approximation of the ischial tuberosities, forming what is usually called a masculine pelvis. It is a modification of the infantile, and, according to Barnes, "is accompanied by development of unusual muscularity, corresponding to the laborious employment of the individual." This delivery occurred in April. In December following, she was operated upon for restoration of the integrity of the rectum. The edges of the rent all around for a full quarter of an inch were vivified. The needles were then carried through so as to just avoid the edges of the mucous membrane of rectum. Incisions along the lateral walls were necessary to relieve tension upon the sutures, and the surfaces thus made were left to granulate, and union took place throughout, save at the superior portion of the perineal body about an inch and a half above the anus. At this point, on the eighth day, a fecal fistula was established. The cervix, though lacerated, was not operated upon. Hardened feces, making free use of the finger necessary, caused much annoyance, until the expedient was adopted of taking a teaspoonful of compound licorice powder in half a glass of water at bed-time, followed by an enema of flax-seed tea and sweet oil in the morning, when no further trouble was experienced. It is now his habit to use this method in all cases of operation about the perineum.

The daily action of the bowels did not seem to retard the healing of the fistula, although fecal matter frequently passed into the vagina. The occasional application of nitrate of silver was all the treatment that seemed necessary to complete the union. At the end of the month, the fistula had entirely closed, and the patient rapidly gained flesh and strength. Fifteen months later, she again became pregnant, and about the first of the present month we decided to induce labor at seven and a half months of pregnancy, with a view of preserving the integrity of the parts gained in the last operation, and also, if possible, obtaining a living child. At the suggestion of Dr. A. S. Hunter, three or four small sponge tents were introduced into the os side by side, which, in six hours, was sufficiently dilated to admit the smallest Barnes dilator. This was

filled by a Davidson syringe, and the two larger sizes soon followed.

The internal os, almost its entire length, was dilated by these means to easily admit three fingers. A bag of waters presented, and pains in the back commenced. Mechanical means were then discontinued in the expectation that nature would complete the labor, but the pains gradually subsided, and in twenty-four hours all was quiet. A No. 3 Barnes dilator was then introduced into the uterus, inflated, and left over night. Uterine contractions expelled the bag, and labor ceased. A No. 9 bougie was then introduced for five inches between the membranes and the uterus, and it remained over night without producing any effect. As the os was then dilatable, and all previous efforts had failed, rupture of the membranes was practised. Twelve hours later, labor came on, and the pains were uniform and progressive. The nates presented. The progress was arrested by the strong cicatricial bands in the regions that had been left to granulate at the operation. These bands were divided with a blunt bistoury, no hemorrhage followed, and the delivery of a dead fetus was effected twenty-four hours after labor had commenced, its presenting parts much excoriated by friction. The mother made a rapid recovery, and suffered no inconvenience from the incisions that were made.

The after-treatment consisted in a complete washing out of the uterus, after the expulsion of the placenta, with a two-per-cent solution of Calvert's carbolic acid and vaginal injections three or four times a day of carbolized water. Her diet was sustaining, and lactation was restrained by the application of stramonium ointment and powdered camphor to the mammæ.

It is possible that had labor been resorted to two weeks sooner, a living child might have been born. An interesting question suggested by the case was, How can labor certainly be induced? For a week beforehand, she had resorted to the hot douche, and then the hot and cold alternately, with no avail. Besides, the various recognized methods already mentioned were adopted, but nothing was effectual until the membranes were ruptured, and this only after twelve hours of delay.

DR. ISAAC E. TAYLOR thought the cases in which there was simply narrowing of the antero-posterior diameter of the pelvis differed from those in which the pelvis was equally or generally contracted, or, as he preferred to call it, "naturally faulty." He then referred to a case in which the antero-posterior diameter was two inches and a half, the pelvis being substantially what is known as the male pelvis. The description given by Dr. Griswold led him to the conclusion that there was narrowing of the inferior strait in the case, and that it was probably reduced to two inches and a half or three inches in diameter. He thought that these differences should be kept clearly in mind, and made distinct when considering Cesarean section, laparo-elytrotomy, craniotomy, and cephalotripsy. If the antero-posterior diameter was only an inch and three-fourths, or two inches, and the head of the child was transverse, it would probably be better to perform craniotomy

and cephalotripsy, rather than resort to Cesarean section. There might, however, be exceptional cases. The reason was that, as the head was transverse in the pelvis, it was in a favorable position, so that after craniotomy the base of the head could be crushed with the cephalotribe. He very much questioned as to whether delivery could be completed by means of the cephalotribe unless the base of the skull was crushed several times. He doubted also whether in one out of twenty cases the base of the skull was crushed with that instrument, but he believed that the head could be easily delivered by a slight manipulation, namely, by tilting the base of the head, and in that manner the operator was able to bring it down readily. He then referred to a case in which, after craniotomy was performed, he introduced the blunt hook, tilted the head, and the labor was completed very promptly. At the next labor the same patient preferred Cesarean section. Porro's operation, however, was performed, and the uterus and ovaries were removed, and the patient passed on very well until the twenty-eighth day, when phlegmasia dolens developed. From this she recovered; but disobeying orders, she got up, and suddenly died of cardiac thrombosis.

The generally contracted pelvis, the naturally faulty, the equally contracted pelvis, ranging from three and a half to three and three-quarter inches in diameter, required Cesarean section when early performed, or, if the labor had existed for some time, laparo-elytrotomy might be preferable to Cesarean section. In Dr. Griswold's case, where the diameter of the inferior strait was so narrow, the child already being dead, there was no proper way by which delivery could be completed except by breaking up the base of the skull or tilting the head.

With regards to methods of producing premature labor, there were none which he had not employed. He thought sponge tents were objectionable because of the length of time required. If the uterus could be pushed down, he would first introduce the finger, as it was the best dilator which could be used; after this a small Barnes' dilator might be used, which might be succeeded by others of larger size. He was unable to recall a case in which this method had failed. As a rule, labor could be established from thirty-five to forty minutes after the first Barnes dilator was introduced.

His conclusions were, that the generally contracted, the naturally faulty pelvis demands Cesarean section, if performed early, or laparo-elytrotomy might be preferred if labor had existed for some time.

The infantile and male pelvis probably would require, in some cases, laparo-elytrotomy, if the labor was far advanced.

In the pelvis in which the antero-posterior diameter at the superior strait was two inches or two and a half, he would perform craniotomy and cephalotripsy.

#### METHOD OF MEASURING THE DIAMETERS OF THE PELVIS.

Dr. Taylor then spoke of the method to which he had frequently resorted for measuring the diameter of the pelvis. Introduce the hand, and for measuring the transverse diameter turn the thumb toward the right or towards the left, and then estimate the difference between the diameter of the pelvis and the width of the hand, which could be done with the thumb. To measure the antero-posterior diameter, turn the hand with the thumb towards the pubis, and make the estimate in a similar manner. He believed



that when the hand could be introduced, the operator could get a more correct view with regard to the antero-posterior, as well as the transverse diameter, than by any other method which could be employed. If after introducing the hand into the pelvis it could not be rotated freely, it was safe to assume that the pelvis was generally contracted. He believed that the so-called justo-minor pelvis, or what he denominated the naturally faulty pelvis, occurred much more frequently than had been supposed.

DR. C. JEWETT, of Brooklyn, referred to a case as follows: An Irish woman, thirty-five years of age, a primipara, had been in labor several days. The physician in charge had been in attendance from time to time and had given ergot during the last twenty-four hours, supposing that delay was due to inertia of the uterus. When Dr. Jewett was called, he found the abdomen tympanitic and the uterus firmly investing the fetus. The occiput was presenting antero-posteriorly, and the head was arrested at the outlet of the pelvis on account of the narrowness of the inferior strait. The actual measurement of the transverse diameter at the outlet was three and one-sixteenth inches, the pubic arch measured fifty-eight degrees. These are the measurements made upon the pelvis after it had been removed, cleaned, and dried. The physician in attendance had attempted to deliver with the forceps, but had been unable to do so. Dr. Jewett subsequently, however, attempted to apply the forceps, but the space was not sufficient to admit the instrument and permit it to be locked. He subsequently attempted to apply Dr. Lusk's cephalotribe, but failed. The woman was delivered by craniotomy and died sixteen hours afterward. In this case also the head of the child was unusually large and firm. He believed that had he seen the case before the head had engaged and become so firmly impacted, he should have performed laparo-elytrotomy.

With regard to the induction of premature labor, the method which he had usually employed was to introduce a flexible bougie into the uterus and leave it in position over night. In the subsequent treatment he had sometimes resorted to Barnes' and sometimes to Molesworth's dilators, and had not had any difficulty in inducing labor in that manner. Manual dilatation was certainly a most excellent method, but he had quite uniformly succeeded in the manner indicated.

DR. A. S. HUNTER remarked that he had used sponge tents for the induction of premature labor in a few instances and had had reason to be satisfied with the results. He thought that if the os was filled completely with them the results desired could be obtained very readily, and if there was sufficient time he would not hesitate to resort to that method. For example, in Dr. Griswold's case where there was nothing to indicate special haste, he advised the use of sponge tents. In cases in which results must be obtained more speedily, it might be necessary to resort to other measures.

He certainly would perform laparo-elytrotomy rather than craniotomy and cephalotripsy if the child was living and if the life of the child would necessarily be sacrificed by attempting to deliver it through the pelvic canal.

DR. WARNER, of Boston, remarked with regard to the induction of premature labor, that he had never resorted to any means except manual dilatation, and had always succeeded. He thought that method was much the safest, and in his experience it had

always acted promptly. After introducing one finger, another might be made to follow, never changing position until he had taken hold of the child's foot and completed the labor. The advantage of manual dilation was that the operator could know exactly what he was doing, could feel just how much force he was using, could determine how much the womb was yielding, and could estimate very precisely the amount of pressure which was being made.

DR. GRISWOLD remarked that the objection which he had to introducing the hand in his case was the condition of the tissues in the vagina. Moreover, the uterus was so high up that it was only with a great deal of pressure that he was able to reach the os. Under the circumstances, where almost all the perineum was composed of cicatricial tissue, some of it was very thin, and it seemed to him to be best to induce uterine contractions and allow labor to progress slowly so that the parts might dilate gradually.

DR. WARNER further remarked that where the uterus was high up it could be pushed down into the pelvis by the hands of the assistant and held there firmly while gradual pressure with the finger was made against the os externum.

#### CANCER OF THE CERVIX UTERI IN A VIRGIN.

DR. TAYLOR narrated a case at follows: In December, 1881, he saw a patient twenty-eight years of age. Upon examination it was with very great difficulty that he could introduce the finger on account of the resistance offered by the hymen. Finally he reached a firm smooth body, and afterwards found that the entire posterior portion of the cervix was gone. He diagnosticated cancer of the uterus, and decided that the best thing to do was to excise the anterior portion of the cervix which was exceedingly hard to the touch. No hemorrhage had occurred during the patient's illness, nor was any hemorrhage induced by the examination. Upon making further examination with reference to operative interference, he discovered that the anterior part of the cervix was exceedingly vascular, and he decided at once to let it alone and to await further developments. No hemorrhage occurred, nor discharge, and he did not deem it necessary to make any examination. In the course of a month it became evident that gas escaped from the vagina. There had occurred perforation of the rectum. On account of pain the patient had been obliged to resort to the use of opium which was gradually increased in quantity until finally she took the equivalent of six or seven hundred drops of laudanum daily; besides, she took a bottle and a half of brandy daily. During all this time the patient's weight and strength rather increased. She died almost instantly from the sudden occurrence of hemorrhage, probably three pints of blood escaping at one gush. At the autopsy the body of the uterus was found to be almost one complete mass of cancerous disease, and the neck was entirely gone. The actual source of the hemorrhage could not be found. That is, no open vessel was discovered. The interest in the case was that it was one of cancer without hemorrhage or discharge during its

progress, and death occurred suddenly in the manner indicated. Dr. Taylor believed that in very many cases of cancer of the uterus it was better to allow the patients to go along under the use of opium and perhaps stimulants rather than to resort to operative interference, such as the curette, cauterizing, etc.

DR. WARNER remarked that the only question with regard to the treatment of carcinoma of the uterus was not whether we should curette or resort to any other operative interference, but what benefit is to come to the patient? Does it cure, or prolong life, or lessen suffering? From his own experience in the treatment of carcinoma of the uterus he believed that, as a rule, the plan of interfering surgically rather hastened than retarded the progress of the disease.

DR. TAYLOR believed that in some cases amputation might be followed by beneficial results. He then referred to cases which had been under his observation and in which the disease had occurred early in life, as early as at the age of from nine to fifteen years, notwithstanding the opinion which had been expressed that carcinoma of the uterus never occurred in virgins.

DR. GRISWOLD referred to a case in which the patient had been operated upon by Dr. Mundé who removed the entire cervix. He saw the woman two months afterward, and there had been complete reproduction of the growth, and involvement of the vaginal wall. The curette was used, also the scoop, and chloride of zinc was applied, etc., but there was another reproduction of the growth within four weeks. After this nothing was done in the way of operative interference, but the patient was made as comfortable as possible, and she lived for nearly two years. The operation, however, seemed to relieve her from the severe burning pain from which she had suffered.

DR. WARNER asked if it was not a fact that large quantities of alcohol and opium prevented disintegration of tissue. It had seemed to him so in these cases. He doubted very much whether curetting ever arrested the progress of the affection.

#### EXTRAUTERINE PREGNANCY.

DR. A. S. HUNTER narrated a case of extrauterine pregnancy in which the pregnancy had existed apparently not more than three weeks. There was evidence of rupture of the sac, but the patient recovered. He gave the details of the history of the case which he proposed to make the basis of a paper upon that subject.

DR. WARNER referred to a case in which there was a small tumor in Douglas' cul-de-sac. The woman was forty or fifty years of age, and had never been pregnant. The tumor was somewhat soft, doughy to the feel, and he thought it was a hematocele. The uterine sound could be introduced to the depth of five inches. Aspiration removed two ounces of blood which coagulated immediately. The blood was examined microscopically, and nothing was found which indicated that it came from an old hematocele. On the following day, another physician was called who aspirated the tumor as a hematocele and drew off twenty-four ounces of blood which coagulated promptly. The woman died and the case was reported as one of hematocele. The specimen was presented to Dr. Cutler for preservation, and on further examination he found



in the cul-de-sac a little fetus. This fetus had probably been there for three or four months.

DR. TAYLOR referred to a specimen of tubal pregnancy which he obtained, and which could be seen in the Wood Museum at Bellevue Hospital. The woman had advanced to a little more than eight months in pregnancy, when she suddenly fell into collapse and died. It seemed evident that death had been caused by internal hemorrhage and at the autopsy it was found that the sac was filled with blood, but it had not ruptured.

DR. GRISWOLD referred to a case as follows: About a year ago, he was called to see a woman who was believed to be suffering from cholera morbus. She was not aware that she was pregnant, although she had passed over one menstrual period. She had pain, vomited severely, and had diarrhea. The patient fell into collapse and died with evidences of internal hemorrhage, and he reported the case as one of internal hemorrhage probably from rupture of an aneurism. It was made a coroner's case and upon examination the abdomen was found filled with blood, and closer inspection revealed the presence of a fetus which indicated that the woman was advanced about eight weeks in pregnancy. The uterus contained a well-marked decidua. The fetus was not found in the Fallopian tube, but the tube when examined gave evidence of the existence of a cyst which had ruptured and hemorrhage had taken place from the edges of the opening. No distinct blood-vessel could be found which had ruptured.

DR. HUNTER referred to a case of extrauterine pregnancy which three years subsequently was followed by normal pregnancy and delivery of a living child. Not long after the completion of the normal pregnancy the remains of the extrauterine pregnancy were discharged by the rectum. This was attended by symptoms which indicated purulent infection, and the woman died. In this case, as also in the case which he had already related, the woman when suffering from extrauterine pregnancy had severe pains which were remittent in character, and not intermittent. He thought this was characteristic of the pains of extrauterine pregnancy not unfrequently if not always, particularly in those case in which rupture of the sac occurred.

## REVIEWS.

THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF THE DISEASES OF WOMEN. By GRAILY HEWITT, M.D., London. Fourth edition: revised, enlarged, and in great part re-written. London: Longmans, Green & Co., 1882.]

The fact that Dr. Hewitt's well-known book has reached a fourth edition is sufficient evidence of the interest it has excited in the profession. The extensive opportunities Dr. Hewitt has had for the observation of gynecological diseases, his thorough knowledge of the literature of his profession, and the dispassionate manner in which he considers most of the subjects he treats of, render his work a valuable addition to the now many text-books before the profession.

It would be wrong, however, to consider Dr. Hewitt's work as a mere résumé of gynecological science. In some respects it is this, but in reviewing it we cannot shut our eyes to the one fact, that the main part of the book is written from one stand-point, viz., what is known as Dr. Hewitt's mechanical system of uterine pathology. To the elucidation and advocacy of this special theory Dr. Hewitt has really devoted his career, and on this theory he evidently stakes his reputation. Our review will therefore naturally take up this theory in the first place, and then we pass on to the consideration of the parts of the book to which it does not specially apply. In an early part of his book (p. 62), Dr. Hewitt states his generalization as follows: "The large majority of the discomforts, pains, and inconveniences complained of by patients and referred to the generative organs, can be traced to and shown to be dependent upon the presence of mechanical changes in the uterus, and to the effects of such mechanical changes. The distortions of the uterus, together with the displacements of the organ, more or less associated, are thus made responsible for such pains and discomforts, and various other symptoms as make up, when put together, the greater part of the affections known as diseases of the generative organs in women." In brief, Dr. Hewitt states that flexions and versions of the uterus, apart from peritonitis and cellulitic inflammation, constitute the cause of most of the gynecological symptoms women suffer from. The paragraph following the one above quoted is so full of interest that we give it entire. "The conclusions seemed at first of so sweeping and general a character, that I hesitated for some time to believe that such simplicity belonged to a subject that had always appeared so difficult; but as time went on it was plain there could be no mistake about it, and the more cases I saw, the more exactly and truly did the principles in question seem to apply themselves naturally to the first-observed facts."

To us this paragraph is significant as showing a vicious mode of research, viz., the conception of principles first and the search for facts afterwards. Dr. Hewitt is most precise in applying his pathology to antelexions of the uterus, and we therefore take it as a type, summing up his views as follows:

1. The uterus has the axis of its cervical and uterine portions in the same straight line.
2. The uterus is not anteverted normally, but occupies a position nearly vertical when the patient is in the upright posture.
3. When the bladder empties, the uterus does not become anteverted, but remains as before. The intestines pass down in front and take up the space previously occupied by the distended bladder.
4. As the result of disease, the uterine tissue becomes abnormally soft.
5. Extra intra-abdominal pressure flexes the body forward.
6. As the result of this antelexion, we get dysmenorrhea, menorrhagia, amenorrhea, sterility, etc.

So far we have summarized Dr. Hewitt's views as to the etiology of antelexion. There is, however, the tacit assumption throughout that the pelvic floor is rigid, and does not yield when a strain takes place. This omission is best understood by the consideration of an experiment illustrative of Dr. Hewitt's views. A large model of the uterus in vertical mesial section is made in sponge. This uterus can rotate antero-posteriorly on a pivot fixed near the os inter-

num. The cervix is fixed to a horizontal support by strings, and strings pass from the fundus to the same horizontal support. Now, if the strings from the fundus be shortened, the uterus becomes anteфлекed, so long as the cervix remains fixed. The fact that damages Dr. Hewitt's explanation is that the pelvic floor yields and bulges when extra intra-abdominal pressure acts: that is, the cervix is not fixed, and thus extra intra-abdominal pressure does not initiate an anteфлекion, although it may increase it when once it has been begun by cellulitis in the utero-sacral ligaments. The cicatrized utero-sacral ligaments give the cervix the fixed support which the yielding pelvic floor does not. There are other difficulties, however, which we merely state. We deny that the normal uterus has the position given in Kohlrausch's diagram; there is no distinct proof of the abnormal softness of the uterine tissue; even if it did exist, the result of extra intra-abdominal pressure would be to narrow the uterus antero-posteriorly and broaden it transversely, not to anteфлек it; the results alleged to follow anteфлекion are too discordant to follow one lesion, and so on.

The etiology of flexions given in Chapter XV. is remarkable. One feels sorry for the young damsels whose uteri became crumpled up after "drawing the cork of a bottle," "stretching up to a cord," "daily long walks," etc., etc. (pp. 144-145). Lord Palmerston used to say that "the outside of a horse was the best thing for the inside of a man," but Dr. Hewitt believes horse exercise decidedly injurious to weakly women, and agrees with Drs. Aveling and Edis that the erect posture has much influence in inducing disease (p. 149), and that the prolonged sitting is injurious. These statements make one really believe in the frailty of women, as according to them they are only safe quâ anteфлекion when in the inverted or genu-pectoral position.

We have frankly stated the difficulties we have in accepting Dr. Hewitt's theory, while we readily grant that it is as yet the only systematic attempt to explain the causation of flexions. The difficulty in explaining the cause of a retroфлекion is at present great, but we think that utero-sacral cellulitis fairly accounts for most anteфлекions. It is unfortunate that Dr. Hewitt has pushed his theory so far, inasmuch as he has left out of account the important part chronic pelvic peritonitis and cellulitis would play in an attempt to create any system of uterine pathology. Indeed, the question may fairly be started if it is probable that there will be discovered any special system of uterine pathology. All recent advances tend to show rather that the pathology of a woman's uterus is much the same as that of her nose or stomach. We would class Dr. Hewitt's most praiseworthy attempt to found a system of uterine pathology based on flexions and versions rather with the ancient searches after the philosopher's stone or perpetual motion, than with the great generalizations of the conservation of energy, or the germ theory.

In Chapters XXIV. and XXV., the question of the treatment of anteфлекions and anteversions by the well-known cradle pessary is considered; of this pessary as well as of all vaginal pessaries alleged to rectify anteversions and anteфлекions, the obvious criticism is that as yet no one has demonstrated that they alter either the flexions or versions, or do anything else than elevate the uterus as a whole. Both chapters, are, however, well worthy of perusal. Of the other parts of the book we can speak in terms of the highest praise. We would specially mention the chapter on hystero-



neuroses as probably the best in any English text-book. In regard to cervical laceration and the effects of Emmet's operation, Dr. Hewitt expresses himself in favorable terms, but he throws no new light on its pathology.

We are satisfied, on the whole, that this is one of the most scholarly and—apart from the mechanical theory—one of the most dispassionate text-books we at present possess. We regret that Dr. Hewitt has allowed his pet theory to overshadow his clinical work, while we acknowledge the difficulty in solving the problems he has attacked.

DAVID BERRY HART.

MANUAL OF GYNÆCOLOGY. By DAVID BERRY HART and A. H. BARBOUR. Edinburgh: MacLachan and Stewart. Pp. 644. With nine lithographs and 400 woodcuts. 1882.

When a book comes to us with the imprint of an Edinburgh house upon it, we can usually take it *for granted* that its author has something to say which is worth hearing. It would be hard to find any department of human knowledge which has not been investigated and illuminated by Scotch, and notably by Edinburgh brains, therefore we received this book of Hart and Barbour's with a certain amount of respect for the sake of its nativity. We venture to say that the original work upon which a portion of this volume is based was done in the *workshop* of Sir James Simpson, which is an uninviting place in appearance, but must abound with inspiration from the genius of him who once presided over it. The wards of the adjoining magnificent Royal Infirmary furnished a rich field for clinical observation, under such teachers as Keith and Alexander Simpson, to the latter of whom the book is graciously dedicated. The preface states that a knowledge of the anatomy, physiology, and pathology of the pelvic organs forms the foundation for good clinical work, and the supposition is that the object of the authors in writing the book was to lay such knowledge before us in an intelligible and attractive form. Glancing at the table of contents, we perceive that they have followed a rational and scientific method in laying out the plan of the work, the abnormal is evolved from the normal, and it is evident that without a knowledge of the latter the former would be useless. In Part II. we submit that a better arrangement would place the chapters upon disturbances of menstrual function, and disturbances of reproductive function before the chapters relating to disturbances of the vagina and vulva, incorporating them in the section which is devoted to the uterus and its ailments. The appropriate bibliography is at the beginning of each chapter, as we see it so commonly in the German book-literature. We wish this custom might become general, in place of introducing references at the bottom of each page. The definitions of the genital organs are given with admirable clearness. Take for example the definition of the clitoris which is usually so defined as to give no impression as to its anatomical relations. "The clitoris, covered by its prepuce, lies in the middle line, and at the apex of the smooth piece of mucous membrane known as the vestibule. Only that part analogous to the glans penis is seen. The clitoris proper consists of two crura which arise from the rami of the ischium and pubis, and unite superiorly to form the body of the clitoris, which lies beneath the mucous membrane. The glans clitoridis is not directly continuous with the body, but joins it through the pars intermedia of the bulb." The statement that "the vaginal orifice is always torn

through the fourchette" when children are born at full-term is too sweeping to be exact. We can recall cases where the fourchette was apparently intact after the first labor. The expression "dove-tailed in all round" (p. 7), with reference to the insertion of the pelvic floor, is by no means an elegant one, nor do we consider that they are accurate in their statement (pag. 24) that "the vagina is a mucous slit in the pelvic floor." The urethra is also designated as a *slit*. The bladder is said to be Y-shaped when full, and oval when empty. We would naturally expect that the reverse would be the case. Of the perineal body it is truthfully said—"its functions are important, but have been both exaggerated and underrated." In the course of the description of the peritoneum they remark, "thus there is formed a vesico-uterine pouch containing *no small intestine* (the italics are ours). Now their observations were made either upon the living or the dead subject. If upon the latter, we beg leave to enter a plea of "not proven," for no viscera suffer more decided changes of position *post mortem* than the intestines. If their observations were made upon the living subject, we await the evidence. The intestines are acted upon by gravity, by the law which governs alike the pressure of gases and liquids, and by intra-abdominal pressure so-called. With these forces at work, with the intestines above, and with the vesico-uterine pouch forming a cavity beneath them, we see no reason why this cavity should not be occupied by them. Furthermore we recall a case in which the uterus was ruptured transversely across the anterior face of the fundus, after an abortion, the depth of the organ being not more than three or three and a half inches, and through the rent two or three inches of the small intestine prolapsed. This would not have occurred had the vesico-uterine pouch been empty. (NOTE. The patient was brought into Dr. Thomas' service at the Woman's Hospital. Dr. T. opened the abdomen, withdrew the intestine, and closed the rent in the uterus with silver wires.) We regret to notice frequent infelicities of expression; we have already cited one, they also are seen in such phrases as "upper third or so," "about one inch," and these sometimes occur when it is desirable to know whether the measurement is more or less than *a third* or *an inch*. The description of the pelvic connective tissue is excellent. It gives facts which are of the greatest importance to the gynecologist, and places the investigations of the authors by the side of those of Pirogoff, Braune, Rüdinger, and others who have demonstrated important anatomical facts by means of frozen sections.

*Chap. II.* relates to the normal position of the uterus. The authors consider that this vexed question has excited a degree of attention of which it is unworthy. It does not surprise us that the subject has caused such attention. Whatever view as to the normal posture of the uterus is the correct one, we may state the following, in general terms:—having found the uterus in a certain posture, *believed to be abnormal*, from the symptoms which are elicited, whether of one variety or another, certain agencies are used which change the direction of the uterine canal, as shown by passing the sound. If the troublesome symptoms pass away, it is both natural and logical to assume that the new position is the normal one. Unfortunately the results following certain methods of treatment are not constant, either with the same or with different gynecologists, and therefore the question as to the normal posture of the uterus is likely to remain an open one. We have our views

upon this subject which are expressed elsewhere. Suffice it to say that they are not those of Schultze nor of Fritsch. In view of the popularity of Schultze's views, Hart and Barbour justly remark in this chapter "Schultze's researches were conducted in a way that certainly anteverted the uterus unduly."

*Chap. III.* brings out the peculiar views which Dr. Hart has been zealously advocating for the past year or two. It concerns "The Structural Anatomy of the Female Pelvic Floor." The anterior and posterior walls of the vagina are considered the dividing lines between an anterior pubic segment which is composed of loose tissue, and a posterior sacral segment which is composed of strong tissue. (We fail to see the contrast between *loose* and *strong*, if a contrast is intended. To have used the adjective *firm* would have established the contrast, which does not exist in fact, for the rectum is not firm tissue, in the sense which would here be implied.) The action of the pubic upon the sacral segment during labor (and it is on account of its influence toward the comprehension of obstetrical problems that this theory was propounded) is compared to the action of two folding-doors, in passing through which one is said to "pull the one door toward him, and push the other from him." The statement is made that "the vaginal walls are not special structures," and upon this statement is based their use as the dividing lines between the two segments. This is flying into the face of an anatomical fact which is too well-recognized to be overturned, namely, that the vagina is not a mere *slit*, but is as definite a structure anatomically and histologically as the rectum or the urethra. The comparison to the folding-doors, or possibly sliding-doors, is an obscure one, and is capable of decided misinterpretation.

*Chap. IV.* The Blood-vessels, Lymphatics, and Nerves of the Pelvis; Development of the Pelvic Organs. This chapter is important, especially the first half of it, but develops nothing new.

*Chap. V.* Physics of the Abdomen and Pelvis, with Special Reference to the Semi-prone and Genu-pectoral Postures. The views here expressed concern, 1. The effects of intra-abdominal pressure. 2. The results brought about by change of posture, especially by the genu-pectoral posture. 3. The effect on uterine position of digital pressure in the vaginal fornices. The subject will bear careful study, and hitherto has not received the attention which it merits.

*Chap. VI.* Menstruation and Ovulation are treated briefly, with the comment that questions concerning them are still unsettled. Tait is quoted to the effect that menstruation will cease if the Fallopian tubes are removed. This statement is nullified by the case of Spencer Wells in which the tubes were removed, but the woman continued to menstruate. The curious phenomena which are sometimes presented by so-called *vicarious* menstruation would have afforded a good excuse for lengthening the chapter.

*Sec. II.* includes *Chaps. VII. to XV.*, and treats of physical examination of the pelvic organs and the various instruments used in gynecology. The authors seem to advise a preliminary external abdominal inspection as a matter of routine practice. This seems to us to be useless, excepting in cases where tumors are suspected. Its omission will save time and the sensibilities of the patient. On page 90, Plate III. should read Plate II. The directions for the isolation of pelvic and abdominal tumors are quite satisfactory. Nothing is presupposed as to the examiner's knowl-



edge of the process, which is a fact of no small importance, and often overlooked in their writings by men who have had many years of experience. For an ordinary vaginal examination, the authors advise the use of the index and middle fingers of the right hand, the patient being in the dorsal position. If one is ambidextrous, it makes little difference which hand is used, but we prefer to follow Sims' directions, and use the left hand. The index finger is sufficient, and causes the patient less annoyance; indeed, two fingers would in many cases cause unnecessary pain. They over-estimate the value of bi-manual examinations, simply because in many cases they cannot be made. We do not intend to detract from the great value of this means of information where it is practicable. In the recto-vagino-abdominal examination, the authors direct that the middle finger of the right hand be placed in the rectum, and the index in the vagina. We cannot see how they will be able to avoid mechanical disadvantage by such an attempt. We think the most effective recto-vaginal examination can be made with the index of the left hand in the rectum and the thumb in the vagina, the patient being in Sims' position. The use of the volsella is prescribed more freely for drawing down the cervix than is common with us in New York. The tenaculum takes its place, but with the patient in Sims' position, with Sims' speculum in use, and with a good light, traction is not often necessary. Sims' speculum is approved in this chapter as the most useful one. For the insertion of tents, the vague direction is given: "The tent is fixed on the spike of an appropriate instrument, and is then passed just as the uterine sound." If, in place of spiking the tent, they would grasp its external end with a good pair of dressing forceps, they would find it more manageable, and having inserted it, they could unclasp the forceps without fear of withdrawing the tent by so doing. Thomas' curette is wisely considered the safest, and sufficiently effective for most cases. We looked in vain for a description of Emmet's scissors. As to anesthetics, we are not surprised that chloroform should continue to retain a strong hold among the disciples of the illustrious Simpson. Deaths after the use of this agent are only too common, and we are very prone to associate their causation with its use. The cautious Keith, as the authors admit, "always uses ether," and, supported by any amount of clinical and statistical evidence, we disagree entirely with them in their statement, "Every patient on whom an operation is to be performed may have chloroform; if the operation is indicated, so is chloroform."

Part II. is entirely devoted to Diseases of the Female Pelvic Organs, and is opened (*Chap. XV.*) with a discussion of the all-important topics *pelvic peritonitis* and *pelvic cellulitis*. The best we can say of the chapter is that it adds nothing to the existing obscurity of this *bête noire*. Dr. Emmet used to announce as a general principle, that he believed every woman to have cellulitis until the contrary was proven. Under Pelvic Hematocele (*Chap. XVI.*), the remark is made that effused blood will stay where it is poured out, and the idea that it gravitates to Douglas' *cul-de-sac* is ridiculed. If this refers to any especial predilection for Douglas' *cul-de-sac*, we should agree with the authors, but it is perfectly clear that so long as the blood remains fluid, it will seek the lowest situation which it can find, just as does serum which is effused into the peritoneal cavity, and which is admitted on p. 54.

*Chap. XVII.* Fallopian Tube, Parovarium, round Ligament,

broad Ligament, tubo-ovarian Cysts. The subject of inflammations of the tubes derives interest from the recent operations of Tait, in which, after having diagnosed salpingitis, the tubes have been removed, with good results. Battey's operation in *Chap. XIX.* is clearly described, and is thought to be still *on trial*. Ovarian tumors are discussed in *Chaps. XX. to XXII.* inclusive and very sensibly. The pathology is not exhaustive, nor should it be in a work of this nature. The diagnosis and treatment are given with sufficient attention to detail. The last edition of Wells' book leaves little to be said upon this subject. The larger part of the rest of the book is devoted to the disorders of the uterus, and these might be divided into two classes, one of which will include the new-growths, and the other will include the remaining troubles. In the chapter on atresia and stenosis of the cervix the authors admit the existence of obstructive dysmenorrhea, which is denied by so many. The opinion that obstruction to the flow of blood through the uterine canal will cause pain is a rational one, as much so as that pain may be caused by congestions in general. Whether the narrow uterine canal is the only cause, or the only factor in producing dysmenorrhea, is quite another matter. Atrophy of the cervix and body of the uterus is comparatively rare. Frommel's paper upon atrophy of the uterine body (*Zeitsch. f. Geb. und Gyn.*, Bd. VII, 36, 2, S. 305) is the most complete contribution to the subject which we have seen, and is mentioned in the bibliography. In *Chap. XXVI.* the remedy for hypertrophy of the cervix is said to be amputation. True hypertrophy doubtless exists, but we do not think it is so common as is supposed. Dr. Emmet has shown that many so-called hypertrophies of the cervix are due to rolling out of the anterior lip after laceration, joined to a rolling or dragging forward of the anterior vaginal wall. For such the remedy lies in Emmet's operation, which is discussed and approved in the next chapter (XXVII.).

*Chapters XXVIII., XXIX. and XXX.* deal with the inflammations of the uterus. We have never yet seen a thoroughly good classification of these diseases: it may be that such a thing is impossible. One set of symptoms with few variations affords the customary description for all of them. The authors have done no better in this respect than other systematic writers. When curetting is required they recommend that it be performed without an anesthetic. For an operation which is so painful as this one ordinarily is, we cannot call this good advice, nor would we neglect to insist upon subsequent precautions against blood-poisoning. Flexions and versions of the uterus form the subject of *Chap. XXXI.* With reason these are considered to be variable terms, and it is hard to draw the line between the physiological and the pathological. The most pronounced antelexion may cause no pain to the individual, while one which is much less in degree may occasion severe symptoms which may or may not yield to treatment. Thomas', Hewitt's and all other antelexion pessaries which are supposed to act by pressure through the anterior fornix vaginae upon the fundus uteri are thought to be irrational, and so they are if certain theories are true, nevertheless patients are often relieved by their use, and one is not relieved by that which acts injuriously. We can apply to same course of reasoning to posterior displacements, with respect to susceptibility to bad effects from them, though the anatomical conditions are necessarily different. The fact is that no *hard and fast* rule can be laid down in regard to any displace-

ment of the uterus, nor as to its remedy. The treatment, in all cases, must be tentative and rational. The advice to use the fingers as the best instrument for repositing a retroflexed uterus is judicious and sound. The best position for this operation is the knee-chest, and the index finger alone, or the index and middle finger, in the vagina, may be used. Either the knee-chest or the Sims' position is better, in our opinion, for this operation, than the dorsal which is preferred by Hart and Barbour. After the reposition one is recommended to place a glycerized cotton plug in the anterior fornix to hold the organ in position. If another plug were placed in the posterior fornix, and a third under the cervix, the uterus would be held more effectually. The short space which they have devoted to the subject of pessaries is commendable. The principle of Hodge's instrument is at the foundation of most of them, and the modification will vary in accordance with the skill and ingenuity of each individual gynecologist.

*Chapter XXXII.* Inversion of the Uterus. The various methods of diagnosis and reposition are described; also the operation for amputation when reposition is impossible or impracticable.

*Chapters XXXIII. to XLII. inclusive,* treat of the new growths of the uterus. Fibroid tumors are first discussed as to their history and treatment. The authors favor the opinion as to the existence of an enveloping capsule. Ergot is recommended for their treatment, but no results of experience are given. We remember a case which was treated for a long time with ergot, subcutaneously. The tumor was finally removed with the entire uterus by Dr. Thomas. Its growth had not been retarded by the ergot treatment, which was given as long as the patient could endure it. Examination of the tumor after its removal showed a gangrenous process at its centre, which was attributed to the ergot. In view of the successful results of operative treatment by Schröder, Péan, Hegar, and Thornton, the hope seems to be justifiable that the removal of subserous fibroids may become as safe an operation as ovariectomy. The use of the elastic ligature and the covering of the stump with peritoneum are elements in the operation from which a great deal is expected. For the removal of polypi of the uterus Thomas' spoon-saw is recommended. Curved scissors are equally effective in many cases. The possibility of mistaking an inverted uterus for a polypus must be borne in mind, and the best test is one which we have seen practised by Dr. Thomas, namely, cutting into the tumor with scissors; if the uterus has been wounded, it can be sutured. The pathology of Ruge and Veit and Gusserow is followed in discussing carcinoma of the cervix. A good practical classification is made into the variety which progresses rapidly with metastases, and the one which progresses slowly without metastases. Ruge and Veit's recent investigations conclude that the disease arises in the majority of cases from transformed connective-tissue cells, which takes us back again to the views originally developed by Virchow. As a race peculiarity, it is noticeable that negroes are more susceptible to fibroma uteri than to carcinoma. Since the disease is so common and treatment is usually so hopeless when it is discovered, the practical outcome will be that vaginal examinations must be more systematic, especially among child-bearing women. The authors do not discuss the question as to its local or constitutional origin. A ray of hope is afforded by the support of the local origin theory on the part of such authorities as Virchow, Thiersch, and Cohnheim. Freund's operation, which promised so much, has



proven utterly unavailing. If the uterus is to be removed, and is not too large to be removed per vaginam, the operation of Corradi offers the best prospects. Carcinoma of the body of the uterus and sarcoma are happily less frequent than the disease of the cervix. Both are briefly noticed.

Section VI. includes the diseases of the vagina. In atresia vaginæ, with retention of menstrual fluid, the important question is as to the method of getting rid of it, whether by slow or by rapid evacuation. Hart and Barbour favor the former method, and speak of two elements of danger which accompany the latter, first, rupture of the Fallopian tubes, accompanied by fatal hemorrhage or peritonitis, and, second, septicemia. The operative methods which are recommended by Thomas, Emmet, and Alexander Simpson are advised. A useful criticism upon the injudicious use of hot or cold vaginal injections is made in the chapter upon vaginitis and vaginismus. These are among the very best agents which we have in the treatment of pelvic disorders, but inflammation of the vaginal mucous membrane not infrequently follows their use.

Section VII. treats of the diseases of the vulva and the pelvic floor. Those of the vulva are mostly of a nature which receive particular attention from the dermatologist. We beg leave to refer to an interesting paper bearing upon this subject, published by Gouguenheim and Soyer in the *Annales de Dermatologie et Syphiligraphie* for April, 1882. In this paper four forms of external vulvar follicular developments are mentioned: first, simple acute folliculitis; second, acne; third, syphilitic acne; fourth, chancroidal folliculitis.

In the chapter on rupture of the perineum the authors advise as preventive treatment moderate support of the fetal head as it is passing the perineum. In this advice they will find many who will disagree with them. The same remark might be made in regard to their advocacy of the axis-traction forceps on the ground that it is less likely to produce rupture. We believe that their advice to repair perineal ruptures at once is sound, granting that there may be exceptions to the rule. If the operation is deferred until pressing symptoms call for its performance, either Bischoff's, Hegar's, or Emmet's is advised. Baker Brown's operation seems to be quite obsolete, and deservedly, as it is more clumsy and more difficult than the others.

In the chapter on *displacements of the pelvic floor* (Chapter XLVII.), intra-abdominal pressure is considered the chief factor in producing prolapsus uteri. If the perineum is ruptured, prolapse is favored. For reparative treatment we were disappointed in finding no mention in Le Fort's operation, nor of Emmet's mode of treating the difficulty by elytrorrhaphy and perineorrhaphy.

Sect. VIII. and IX. upon disturbances of the menstrual and reproductive functions, would have been more appropriately considered, as we have already remarked, under the head of uterine disturbances. Kehrer is quoted as stating that one-fourth of the cases of sterility are due to insufficient vitality of the seminal fluid. The popular fashion is to lay the blame of this condition, without discrimination, upon women. Important suggestions are made in regard to the evacuation of the uterus, when an abortion occurs, either naturally or artificially. We are free to say that we think there are better methods of doing this than the one which is advised by the authors, but as the subject belongs to the domain of obstetrics, we forbear discussing it.

In *Chap. L.* Thomas' work is referred to as giving the best resumé of the subject of extrauterine gestation. *Sect. X.* embraces the diseases of the bladder and rectum. For the former they recommend as authorities Skene and Winckel. They advocate dilatation of the urethra with the finger upon suitable occasions. Dr. Emmet has taught that such a proceeding is never suitable, but this is doubtless too radical a position. Skene's endoscope for urethral examination is mentioned, but no mention is made of Dr. Emmet's button-hole operation for the same purpose. No one has had greater experience than he in the treatment of diseases of the female bladder, and it was quite a surprise to us that his opinions were not referred to. The well-known rectal troubles, and coccygodynia are described, and recommendations for operations are offered in *Chap. LIV.*

In the Appendix are a brief but very good sketch of syphilis in the female, and remarks upon the etiology of uterine diseases, case-taking, and the sources of gynecological literature. This book, like all other treatises of its kind, is deficient in a section on the diseases of the female breast and their treatment. As a part of the sexual and reproductive apparatus, a study of its disorders is peculiarly fitting for the gynecologist.

One of the best features of this work is its numerous pictures. Some of them are familiar enough, but very many are new to us. We do not mean to give unqualified approval to this department, for example Fig. 2 is obscure enough, notwithstanding it is taken from Henle. Plates I. and II. are of artistic merit, and so are the series of tracings representing the relations of the peritoneum. Plates IV. and V., notwithstanding good drawing, are defective. In the first the legs should be flexed upon the thighs and the latter drawn up toward the body to complete the representation of the "semi-prone posture." In the second, which represents the "semi-prone posture, with Sims' speculum passed, and uterus drawn down with a volsella," the hand which holds the speculum has the palmar surface of the fingers resting against the woman's buttock, and the speculum supported by the back of the hand at the metacarpophalangeal joint, instead of grasping it in the proper manner. Taking the work in its different departments, it is of unequal merit. It is marred by many infelicities of style and expression, some of which have been pointed out. Part I. is altogether the more satisfactory, here the authors seem most *at home*. Dr. Hart's excellent contributions to the structural anatomy of the female pelvis and pelvic organs during the past few years make him an authority upon such subjects. We commend the fairness of the authors in appreciating the work of American gynecologists, which is not always done by British and continental authors. A treatise of this kind is an ambitious work, and we are free to say that our authors have succeeded better than is usual in first editions. A riper experience will lead to careful revisions and additions, and place the book among the best upon this subject. We confidently expect that it will be accorded a kind reception by the profession as well in this country as in Europe.

AND. F. CURRIER.

## ABSTRACTS.

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**1. F. Karewski (Berlin): Experimental Investigations in Regard to the Influence of Puerperal Secretions upon the Animal Organism** (*Zeitsch. f. Geb. und Gyn.*, VII., 2).—As long ago as 1843, Scherer experimented with the secretions of puerperal women. The secretions, taken the third day after delivery, and injected into a healthy pup, produced its death in two days. Examination revealed extensive inflammation of the muscles and the connective tissue, collections of hemorrhagic exudations, and intense inflammation of the kidneys. Rokitansky and Kehrer followed the same line of experiments, and the latter was able to note the influence of normal lochia, as well as that which was taken from diseased puerperal women. The author adds his experiments to those which have been already mentioned. He collected his material for experimentation by means of an ingenious apparatus, which was rendered aseptic by the exercise of proper precautions in its construction. The material was examined microscopically both in the fluid and in the dried state, after careful preparation by Ehrlich's method. A few days after delivery, the pure blood tended to diminish and the pus to accumulate; bacteria were also found, and vibriones in cases where a septic process was going on. Most of the bacteria were of the spheroidal form. Dogs and guinea-pigs were experimented upon, both by subcutaneous injection and by injection into the jugular vein. In some cases also, inoculation through the cornea and the skin was practised, and injections into the vagina. The effect upon the general appearance and the temperature was carefully recorded. Lochia obtained after the third day from delivery produced what were believed to be pathological elevations of temperature (in distinction from the frequent variations of moderate extent, which in puppies are physiological); the elevation was greater in cases where the woman was suffering from puerperal disease. In addition to the rise in temperature, the animals suffered from intestinal catarrh. In cases where inoculation was practised, diffuse inflammation followed, and death from embolism resulted from injections into the veins.

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**2. N. Phænomenoff (St. Petersburg): Concerning the Theory of Kyphotic Pelvis, and the Rupture of the Pubic Symphysis During Labor** (*Zeitsch. f. Geb. u. Gyn.*, VII., 2).—The theory of kyphotic pelvis as a particular pathological manifestation, which bears within itself a definite anatomical character, is entirely a modern one. This might be due to two causes: 1. That the deformity is exceedingly rare; 2. That it not infrequently has occurred in multiparæ who, in their first labors, have been delivered without the assistance of art. It must also be remembered that pelvimetry is much better understood now than it formerly was. Rokitansky was the first to describe the anomaly, differentiating it from curvature of the vertebræ with abnormal inclination of the pelvis, and showing the relationship between the two. Neugebauer referred to the narrowing of the transverse diameter of the outlet of the



pelvis, but Breisky was the one who established the present theory of the deformity upon a firm basis. Other writers have added more or less to the knowledge of the subject, but from a clinical stand-point the knowledge is still incomplete. The author has recently had a case in which delivery was effected with the forceps. The patient survived until the third day, and a long description of the case in all its peculiarities is given. One marked peculiarity was the rupture of the symphysis, which is considered by many to be a hypothetical accident, and is admitted to be almost the only recorded case. Twenty cases have been collected by the author, which give the following results: Fourteen died, five of them being multiparæ: thirty-four children were born, nineteen of them being alive at birth; of the latter, four were born without assistance, five by the Cesarean section, four by the assistance of the forceps, and six after artificial abortion. The twenty cases of the table are divided into three classes: 1. Those in which the transverse diameter of the outlet does not exceed nine centimetres, in which labor is not especially interfered with. 2. Those in which this diameter varies between seven and nine centimetres. The prognosis in such cases is bad, and an operation of some sort is required almost invariably. 3. Those cases in which this diameter does not exceed five centimetres, and in which the prognosis is bad, on account of the impossibility of birth per vias naturales. As to the choice of operation to be performed, that must vary in accordance with the circumstances in each case.

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**3. R. Frommel** (Berlin): **Concerning Puerperal Atrophy of the Uterus** (*Zeitsch. f. Geb. u. Gyn.*, VII., 2).—This atrophy is usually accompanied by atrophy of the entire genital apparatus, and is most commonly caused by puerperal diseases of the uterus or its surroundings. Schröder distinguishes three varieties of the disease—one occurring early in the puerperal period, particularly with tuberculous patients, but also with those who are sick with puerperal fever; another which attacks women who are poorly nourished, though labor, the puerperal period, and lactation may have taken the normal course; and a third, which is the result of severe puerperal disorders, which are conditioned primarily upon diseases of the ovaries, or fundamental disturbance in the uterus itself. Out of three thousand cases of all sorts which appeared at the Berlin polyclinic, twenty-eight illustrated this disease. It is more frequent in public than in private practice, but is by no means unknown in the latter. Of the twenty-eight cases, the youngest was nineteen years of age, and the eldest forty; it is therefore not to be confounded with senile atrophy. The symptoms which excite the attention of the patients are absence of the menses, though lactation may have ceased for a long time, pains throughout the entire body, a feeling as of some living object in the body, pains in the back and legs, and the complaints in general of hysterical persons. The only diseased condition which one finds upon examination of such patients is the atrophy of the uterus, and usually of its dependents. The vagina is in a condition of subinvolution, and shows a tendency to prolapse. The walls of the uterus are thin, and the body is not very movable. The sound must be used with great caution, lest the peritoneal cavity be entered. One of the causes of this atrophy is considered to be lactation, and when the intimate connection of the nerves of the breast with those of the uterus is considered, this theory

seems quite reasonable. It is very likely to come when conception quickly follows marriage, when the child is nursed by its mother, and conception occurs again during lactation. In such cases the uterine forces appear to be exhausted, and neither menstruation nor pregnancy reappear for a long period, if at all. The prognosis, with reference to the restoration of the functions of the uterus and ovaries, is bad. Whatever treatment is given should aim toward the improvement of nutrition, and especially that of the nervous and vascular systems.

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**4. Maggioli (Rome): Internal Use of Iodoform in the Septic Processes of Puerperal Fever** (*Gazzetta Medica di Roma*, VIII., 1).—He agrees with Spiegelberg in the necessity of applying antiseptic principles to the treatment of puerperal cases, but not entirely in what Spiegelberg calls secondary antiseptis. Iodoform internally is useful in puerperal cases for many reasons: it is readily absorbed and readily tolerated by the mucous membrane of the stomach and intestines; it is readily diffused, and the iodine is found (after the administration of iodoform) in the urine, saliva, tears, sweat, milk, nasal mucus, menstrual blood, and in the air expired from the lungs. The iodine reaction may be obtained from the urine as late as four days after the administration of the last dose. From two to three grammes may be given daily without harm. Nine-tenths of the weight of a given quantity of iodoform consist of iodine. The generally accepted beneficence of this substance as a topical application suggests its utility as a means of internal medication. The author's experience is limited to four cases of puerperal fever, in which the results were very favorable. Two additional cases were treated by Moleschott, the substance being used in the form of an unguent and rubbed into the skin.

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**T r l n (Paris): Troubles of Menstruation After Surgical or Traumatic Lesions and After Ovariectomy** (*Ann. de Gynécologie*, Sept., 1882).—Observations made by the author and by others upon this subject have led to the following conclusions: First, accidental or operative traumatism can have no permanent influence upon the menstrual functions; second, such influence may suppress it for a time, suggesting permanent disappearance, or pregnancy; third, menstrual troubles may supervene shortly after the occurrence of the traumatism, varying in character, now anticipating in point of time, and, again, delaying; fourth, after operations in certain regions of the body, a bloody flow frequently appears, and may continue for several days. It is not usually accompanied by pain and appear to have no influence upon succeeding periods. The author considers it as absolutely a chance phenomenon. He divides the regions of the body into four zones, according to their influence upon menstruation or uterine congestion. The first zone includes the sexual apparatus. Operations upon any of the organs connected with it are most apt to be followed by disturbances of menstruation. The second zone is likewise very important, and is also a genital zone. It includes all the parts which adjoin the genital organs, including the labia, the mons Veneris, and the anus. The third zone is constituted by the breasts. The fourth zone is constituted by the rest of the body. An interesting fact is that menstruation which may have been

suspended for some months, is sometimes re-excited by an operation in one of these four zones. Particularly does the operation of ovariectomy have an influence upon the menstrual flow. It may hasten it, it may delay it, or it may cause the so-called uterine epistaxis which *may* not affect in any way the natural cause of menstruation.

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6 R. Rinaldi: *Gravidanza extra-uterina (tubo-abdominale diagnosticata dal Prof. V. Maggioli)*. (*Reprint*.)—This rare form of extrauterine pregnancy occurred in a woman of good constitution, who was married at thirty years of age, and had already borne two children before the extrauterine pregnancy occurred. The diagnosis was for a long time uncertain. A cystic tumor, probably ovarian, was suspected. The absence of the menses, during nine months, together with the discharge of blood and membranous material at the end of that time led to the belief in extrauterine pregnancy. The tumor was movable, free from the abdominal walls, situated in the umbilical and hypogastric regions, and lay mostly upon the right side. The uterus was large and anteverted, and the cervix was soft. The enlargement had proceeded very gradually during the period mentioned. Considerable fever followed the discharge of blood and membrane. This was treated with suitable doses of quinine and the bowels were kept open by means of injections. Prof. Maggioli who made the diagnosis strongly advised laparotomy, but the husband of the patient objected. Peritonitis soon intervened with a fatal result. An autopsy was made and the diagnosis was confirmed. AND. F. CURRIER.

## ITEMS.

1. THE attention of CONTRIBUTORS is called to the new rules concerning REPRINTS in the NOTICE before CONTEXTS in this number.

2. THE gynecological profession has to deplore the loss of several prominent members during the past month: PROF. VON BISCHOFF, of Munich, celebrated for his investigations on ovulation; PROF. VON HECKER, also of Munich, whose numerous contributions to obstetrics have made his name renowned throughout the world; PROF. BENEKE, of Marburg, one of the rising specialists; and PROF. FIEBER, of Vienna, chiefly known for his contributions to the electro-therapeutics of female diseases.

3. DR. V. H. AVELING, of London, takes exception to our reviewer's question of his statement, that the account given by Dr. Aveling of the invention of the obstetric forceps in his work on *The Chamberlens* (see December, 1882, SUPPLEMENT) is the first correct version which has appeared. Dr. Aveling insists that Leishman is wrong when he calls Paul Chamberlen the inventor of the forceps. This instrument was invented by Paul's *uncle*, and Dr. Aveling is the first to settle this fact beyond doubt.



# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY

GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

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### A CASE OF CONGENITAL SYPHILIS WITH CEREBRO-SPINAL FEVER.

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BY

HENRY D. CHAPIN, M.D.,

Attending Physician to the Class for Diseases of Children, Out-Door Department,  
Bellevue Hospital.

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ON Sept. 27th, 1882, a perfectly healthy-looking young woman, nineteen years old, brought her baby, aged seven weeks, into my service with the following history:—He was born in an apparently sound condition at eight months. He continued healthy for two weeks and four days, when red blotches appeared, first on buttocks, then on the arms and face. The snuffles appeared when he was one month old. On examination the skin was found to be covered by copper-colored stains with the bullæ of pemphigus on the hands and feet. The nose was somewhat flattened at the bridge, with coryza well marked. No history of syphilis could be derived from the mother, but her husband was undoubtedly suffering from specific accidents, from the account she gave of him. The baby was treated by mercurial inunctions and slowly improved until about Oct. 10th, when the coryza had largely disappeared and the eruption almost completely faded. The child was nursed by its mother and was very well nourished. About this time he grew quite fretful, had been costive for several days, and was seized with vomiting, which, from the mother's account, appeared to be projectile. On Oct. 12th his neck got very stiff and the head was thrown back. Temp. 102°. He was put on small doses of the bromide and iodide of potassium. Oct. 17th, temp. 100°. The head is much retracted and the baby cries when it is pressed forward. The fingers are clenched, with the thumb tightly bent over the hand. A lighted match being held near the eye attracts no attention. The head is not hot and the anterior fontanelle not prominent. Oct. 18th, the baby seems better, but will not nurse. No rash, except the faded coppery blotches of syphilis, and no red mark left upon drawing the finger over the skin. There was also no apparent hyperesthesia of skin. Oct. 19th, the baby

still refuses to nurse, but took a little sugar and water. About 8 A.M. he began to get very cross and bore his head in the pillow. He continued to roll his head from side to side until 10 A.M., when he was seized with convulsions. He went from one to another and died in one of them.

The autopsy was made Oct. 20th. The child was very well nourished, with no signs of specific cachexia, except a slight coppery discoloration of the skin. There was no dusky mottling of the skin, so often seen in cerebro-spinal fever. The brain was quite soft, with no hyperæmia nor exudation at the vertex. The ventricles were distended with serum. There were thick patches of fibrin and pus at the optic commissure, fissure of Sylvius, and the under surface of the anterior lobe and middle lobe, also upon the anterior surface of the medulla oblongata. The under surface of each lobe of the cerebellum had quite a large patch of exudation.

The spinal cord was taken out entire. On slitting up the dura mater the posterior surface was found to have a continuous layer of thick exudation extending from the medulla to the cauda equina and including the latter. The anterior surface had a thick layer extending from the medulla about half-way down, where it grew thinner and disappeared. There was then a space about six lines in extent in which there was no exudation. It then began again and extended to the end of the cord. With this exception the whole cord was completely encased by the exudation. The heart, lungs, liver, spleen, kidneys, stomach, and intestines were examined and found healthy.

Although it is very interesting to notice the occurrence of the cerebro-spinal fever with the syphilis, it is extremely improbable that the latter disease stood in any causative relation to the former. According to the present views, cerebro-spinal fever is a constitutional disease, depending, like scarlatina or pertussis, upon a specific poison and produced by the poison of no other disease. But besides this, syphilitic disease of the central nervous system is not accompanied by much fever, while in the case just reported the temperature began to rise as soon as the cerebro-spinal symptoms began to develop. It is also a fact, noted by most of the authorities, that syphilitic accidents of the cord and its envelopes are rare compared with similar affections of the brain and its membranes. In the preceding case, the principal violence of the disease was expended upon the pia mater of the spinal cord. Much the most interesting point to be noted is the occurrence of the cerebro-spinal fever at the age of ten weeks. While children are more liable to be attacked by this disease than adults, yet the

great majority of cases are over one year old. In those occurring under one year, very few are attacked at the early age of the case here cited.

Prof. J. Lewis Smith made the following remarks in presenting the case before the Pathological Society:—"Cerebro-spinal fever, or meningitis, usually appears in an epidemic form, many cases occurring in the course of a few weeks or months, after which the epidemic gradually disappears. The first epidemic of this malady in New York City, within the recollection of those now living, occurred in 1872-73. The victims were chiefly children and young adults, many of whom died comatose after a very short sickness. The remarkable fact is remembered that this epidemic began among the over-worked horses of the city car and stage lines, the animals in some instances being stricken down in their harness. By mid-summer in 1873 this epidemic had nearly or quite ceased. Since 1873 little has been seen of this disease in New York till within the last two years. But during 1881 and '82 many isolated cases have occurred, and in one family that came under my notice, three children and one adult were attacked by it. This long continuance of cerebro-spinal fever in our midst, though without sufficiently numerous cases at any one time to justify the title of an epidemic, suggests the question whether it is not becoming an endemic with us, just as scarlet fever and diphtheria have been established in the city. That this disease is constitutional with the meningitis as a local manifestation is, I think, the belief of the most intelligent physicians who have investigated the subject, and that there is often an exciting cause of the attack, one that produces a perturbing effect on the system, as great mental excitement; perhaps in the domestic animals improper feeding or overwork, has been shown by many observations. A point of great interest in the case we are now considering is the age. Its occurrence in an infant of ten weeks exemplifies the fact, stated by Von Ziemssen, that no age is entirely spared.

Physicians usually derive important aid in diagnosing meningitis in infants, whatever its cause, whether it be simple, traumatic, tubercular or cerebro-spinal, by observing the state of the anterior fontanelle. If this be prominent or convex, we may infer the presence of hyperæmia or effusion under-



neath. If the fontanelle be prominent and forcibly pulsating, we conclude that there is active arterial hyperæmia, probably inflammatory. Occasionally, however, the fontanelle is level or even a little depressed when there is meningitis, accompanied by more or less effusion. Thus in the case which we are now considering the fontanelle was not elevated, and I have seen it a little depressed in undoubted cerebral meningitis, especially when there was some emaciation, and the brain had wasted with other parts. If the inflammatory lesions occur chiefly in the spinal meninges, appearing but slightly upon the surface of the brain, and producing but slight effusion within the cranium, elevation of the fontanelle may be slight, or not appreciable."

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#### THE SYMPTOMS AND DIAGNOSIS OF MALARIA IN CHILDREN.

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BY

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(Continued from p. 110.)

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*Pains in various parts of the body* are usually complained of by children who are old enough to talk at all. The most characteristic of these is the pain at the epigastrium. My attention was first called to this symptom by Dr. Ripley, who told me he regarded it as quite diagnostic. Since that time, I have carefully noted its presence or absence in all my cases. In one hundred and twenty-eight patients, I have found it present in one hundred and one and absent in twenty-seven. In about one-third of these, it is stated to have been severe.

I am well aware of the liability to error when looking for particular symptoms in any disease. I have sought to escape this by avoiding direct questions altogether. In the majority of instances, I am sure, the parents volunteered the information. If it was not mentioned in reply to the question,

whether the child complained of anything else than the headache, as that was usually the first thing mentioned, I put it down as absent. I have often found that the mothers had come to consider it a pathognomonic symptom, where several cases had occurred in the family or repeated attacks in the same child.

As a few illustrations take the following: One little boy of twenty months, who could hardly speak as many words, it was said, every afternoon about four o'clock would put his hand to his stomach, and say "Oh!" This occurred with the other symptoms, well marked, of the onset of a paroxysm. Another little fellow of two years complained constantly, the mother said, of being "sore in his stomach." In two or three cases, the pain was described as gnawing; very often it was so severe they cried from it, and not unfrequently it formed the most prominent symptom of the disease. The pain seems to have no relation to the taking of food, coming on indifferently at any hour when the paroxysm begins, or if slight before, now becomes more severe. In twenty-nine cases, epigastric tenderness was also present. In some patients it was so acute that they could not even bear the weight of the clothing.

I believe the epigastric pain to be neuralgic, depending perhaps upon congestion of the stomach, which is found as one of the lesions in most of the fatal cases. The pain, in almost every instance, has been promptly relieved by antiperiodic treatment, so that its dependence upon the malarial poisoning was unquestionable.

Pains in the splenic and hepatic regions are occasionally complained of, but much less frequently than at the epigastrium. Splenic tenderness is more frequent. I have noted it in about one-fifth of the cases, in many it was acute. But it is by no means so characteristic as many writers would lead us to suppose. Hepatic tenderness was seen in a few instances. Neuralgic pains in the back, the extremities, the neck, and general soreness have all been noted occasionally. This general cutaneous hyperesthesia is often acute, and, when accompanied by fever, may lead to the diagnosis of some affection of the central nervous system. In the subjoined case, the febrile symptoms were slight. It, however, illustrates well the point under consideration.

CASE V.—Robert M., aged eleven years, was brought to the

Dispensary May 19th, 1882. His mother stated he had been complaining for several weeks of headache, and of late had seemed to be growing stupid. She thought he was losing his memory. For two days he had been having very severe pains in the calves of both legs of a neuralgic character, and had also complained of the parts being sore to the touch. His limbs were so weak he could scarcely walk a block and a half. A slight fever had been noticed to come on toward evening, but there had been no chill, no sweating, and no vomiting.

His axillary temperature was found  $101^{\circ}$ ; he was pale and anemic; pulse regular; pupils normal. He walked unsteadily, not clearing the floor well with his feet, and seemed inclined to drag the left limb slightly. On testing the different muscular groups separately, no real paralysis could be discovered, but all the muscles seemed weaker than normal. Over the whole of both lower extremities there was great hyperesthesia, so that even moderate handling caused him to cry out with pain. This was much more acute in the thighs than in the legs. None was present in the upper extremities. Cinchonidia was ordered, and two days after he reported. There was then no hyperesthesia to be found, and he said the pains were much less severe. He could walk much better than before. Slight fever continued for a few days, and the pains steadily improved, the medicine being kept up.

He was not seen, after a week from his first visit, until Nov. 8th, when he was found walking perfectly well, and said he had had no return of the symptoms since I last saw him.

The condition of the *spleen* was recorded in seventy-nine cases; in sixty-four, it was found enlarged, and in thirty-eight of these very markedly so; in four, doubtful enlargement is stated; and in eleven, no increase in size was found.

A word with reference to the size of the spleen in children Canteteau gives the following dimensions, taken mainly from Sappey.

At birth, the spleen is  $1\frac{1}{4}$  inches long,  $\frac{9}{10}$  broad,  $\frac{4}{10}$  thick; from four months to one year, 3 inches long  $1\frac{1}{4}$  broad,  $\frac{1}{2}$  thick; at five years,  $4\frac{1}{2}$  long,  $2\frac{1}{2}$  broad, 1 inch thick; at eleven years,  $4\frac{1}{2}$  inches long,  $3\frac{1}{4}$  broad, 1 inch thick. At birth, the weight of the spleen is to the weight of the body as 1:288; from four months to one year, as 1:103; at five years, as 1:88; in the adult, as 1:403.

The spleen is thus relatively larger at five years than at any other period of life. The capsule being less resistant than in the adult, the organ undoubtedly enlarges more readily and quickly in children. It, however, subsides quickly, and hence may be absent at the time of the examination



unless this be made at the height of the paroxysm, or after the disease has existed for some time. Hence too much stress should not be laid upon the absence of splenic enlargement at a single examination. My own experience accords with the teaching of Dr. Janeway, that the spleen, unless enlarged, does not come in front of the middle axillary line. In children, the enlargement may be overlooked from the fact that it takes place in a considerable number of cases chiefly upwards and backwards. This occurs oftener, I think, than in adults. I have frequently found its upper border, as made out by percussion, as high as the seventh rib, and, in several cases, it has reached the height of the nipple, while it has been found below the free border of the ribs in a very much smaller proportion. This explains the fact why palpation does not give us more information in children. We are also deprived here of the advantage to be derived from a forced inspiration. Personally I have found palpation without value except in an extremely small proportion of cases.

Most authorities assert that splenic enlargement is a more constant symptom of malaria in children than in adults. My own experience in adults has not been sufficiently large to enable me to generalize upon this point.

Enlargement of the liver is often present, but is less marked and less constant than the changes in the spleen.

*Disturbances of the digestive system* are almost uniformly present and are usually pronounced. Vomiting was present in seventy-eight out of one hundred and twelve cases in which it was mentioned. It most frequently occurred at the onset of the paroxysm; in nineteen it was persistent. In almost all cases complete anorexia exists. I have recorded the appetite as being unaffected in only eleven cases. The condition of the tongue is to be reckoned among the diagnostic symptoms. Almost all writers agree upon this point. The typical tongue is normal or slightly reddened at the edges and tip, while the centre is heavily furred, of a brownish-yellow color, which shades off into a dirty-white. A clean tongue I have noted in only nine cases. Dr. Fruitnight has called attention to the fact that the clearing up of the tongue is one of the best guides to the fact of cure. I can fully indorse this statement from my experience.

In one hundred and forty cases in which the bowels were mentioned, they were reported regular in fifty-eight. In fifty-five cases there was constipation; in many it was obstinate. Looseness of the bowels or diarrhea was present in twenty-seven cases. My statistics on this point are somewhat at variance with those given by other writers. Season and locality may explain the discrepancy. The diarrheal cases were usually in the younger children, and constipation in the older ones.

*The countenance* and the appearance of the skin are usually altered in malaria. The face is pale and anemic, occasionally of an icterode hue. Dark-bluish rings beneath the eyes and about the mouth are very common, and the features have a sunken aspect. This is usually marked only in the subacute or chronic cases.

In regard to *thoracic symptoms*, we may say that there are none in the simple cases, beyond a little cough, from bronchial catarrh, which is exceedingly common. Occasionally the poison seems to be localized chiefly upon the lungs, giving rise to very obscure and very threatening symptoms, resembling much, both in symptoms and physical signs, the onset of acute pneumonia. This will be discussed more at length in speaking of complications and diagnosis.

*Symptoms referable to the genito-urinary system*, so far as I am aware, have not been mentioned by authors. I have noted their presence in seventeen cases. Two cases of nephritis will be mentioned under the complications. The remaining fifteen were cases of functional disorders. It is a fact worth noting that eleven of these were in females, and that ten were in patients over six years of age. Five were over nine years. It will be evident that these symptoms in children under three years of age would often pass unnoticed, hence their frequency is undoubtedly greater than the figures would seem to indicate. Retention of urine occurred in three cases, incontinence in six, and in six the micturition was reported frequent and often painful. Several cases were brought for treatment for this symptom. Examination of the urine was made in most of the cases, but gave no clue to the cause of the symptom. Prompt relief followed the use of antiperiodic remedies in almost every instance.

CASE VI.—Honora B., aged twelve years, was brought to the

Dispensary Oct. 6th, with the history that for six weeks past she had been troubled exceedingly with her water, being obliged to pass it every ten or fifteen minutes during the day. At night she slept well, and was not disturbed from this cause. At no time had there been nocturnal incontinence. She had never been troubled in this way prior to the present attack. Examination of the genitals gave negative results. The bowels were regular and the appetite reported good, though she was pale and anemic and her face suggested strongly the malarial cachexia. She had had epigastric pains, but no headache. The spleen was found immensely enlarged, extending from the level of the nipple to near the crest of the ilium. There was also splenic tenderness quite well marked. A possible dependence of the urinary symptoms upon the malaria was considered, but a positive diagnosis reserved until the examination of the urine could be made. This was made the following day. Urine was of an amber color, spec. gr. 1.012, neutral or faintly acid in reaction, a slight cloudy deposit of mucus, no albumen. Cinchonidia ordered.

Four days later she reported that she was feeling very much better, and that the trouble with the water had almost entirely ceased. On October 13th, one week after coming under observation, there was no trouble whatever with the urine, but epigastric pains and tenderness with marked splenic enlargement still existed. Ordered to continue the cinchonidia.

Nov. 10. She reports that she is feeling quite well, and has had no return of the urinary symptoms. Spleen still very much enlarged. Another child in the same family has been under treatment for malaria also, with well-marked symptoms, relieved entirely by cinchonidia.

CASE VII.—Ella K., 7 years of age, was brought for treatment Oct. 23d by her mother, who stated that the child had been troubled with nocturnal incontinence of urine at intervals for a year. She had been much worse for a few months past, scarcely a night passing without incontinence. During the day, micturition was very frequent, often every few minutes. The child had been sent from school by the teacher, because of this annoyance. For the past few days she had complained of hypogastric pains while passing water. She had had much frontal headache and pains in the stomach. The tongue was coated, the appetite poor, and the general appearance one of anemia. Drowsiness in the afternoon, and occasionally slight fever had been noticed. The temperature was normal, but the spleen was decidedly enlarged. The urine was examined with the following result: Reaction faintly acid; spec. gr. 1.008; a dense yellowish-white turbidity, which, after standing, subsided, forming a heavy deposit nearly one inch deep in a four-inch conical glass. The supernatant fluid gave albumen about five per cent by bulk. The microscope showed the deposit to be almost pure pus; there was some vaginal epithelium, but nothing else abnormal. The patient was put upon cinchonidia in moderate doses, and four days later, micturition by day was reported much less frequent. No incontinence at night since



beginning the treatment. The urine was strongly acid, perfectly clear, no appreciable deposit after standing, no albumen, and only a few scattered pus-cells under the microscope.

Two and a half weeks later, the mother reported that the medicine had been taken regularly until about a week ago, when the child was so much better she had discontinued it. The epigastric pains and the headache were relieved; the appetite had improved, and there had been no recurrence of the urinary symptoms. It was normal in frequency by day, and there had been no incontinence at night. Urine was examined both chemically and microscopically, with negative results. The spleen was still enlarged, and for a few days a disposition to sleep and slight fever had been noticed every day about three o'clock. Ordered to take the cinchonidia again.

She was not seen until Dec. 8th, about seven weeks after the first visit. She had taken no medicine for nearly two weeks, and had had no incontinence until two days before, when it had returned accompanied by a fever, which came on every afternoon.

This last case presents some difficulties in diagnosis which I myself have not been able satisfactorily to clear up. The amount of pus present is of course a sufficient explanation of the albumen which was found. The source of the pus may have been from a pyelitis, a cystitis, or some abscess rupturing into the genito-urinary tract. Its abundance and prompt disappearance would seem to justify the last theory. Hypogastric pains would look more like cystitis. The fact that the urine remained acid throughout the disease, and the absence of mucus in any considerable amount, seem to support the supposition of a pyelitis. The examination of the external genitals threw no light on the case. The existence of malaria seems to me to be unquestionable. It seems quite as clear that the incontinence depended upon it.

(To be continued.)

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## ABSTRACTS.

Prepared by J. FEWSMITH, JR., Newark, N. J.

**1. Closet: Contribution to the Artificial Nourishment of Children, Especially with Biedert's Cream Mixture** (*Berlin. klin. W.*)—The author opens his paper with the pertinent remark that the tolerance of infants for artificial nourishment is subject to such extreme individual variations that the one can bear no artificial food, while the other is not injured by the greatest sins against rational rules of diet. But we have a fair criterion to judge by when we try some form of nourishment in a child who has previously suffered from digestive disturbances. This test the cream mixture has generally stood well. Closet has always used the

No. 1 mixture ( $\frac{1}{2}$  L. cream,  $\frac{2}{3}$  boiled water and 15 grm. milk sugar), and has noted in detail 30 cases, 27 of which suffered from more or less severe intestinal disease and were in more or less atrophic condition. Two children, 3 mos. old, had acute intestinal catarrh, 7 at the age of 3 weeks to 2 years had chronic intestinal catarrh, 2 had gastritis acuta, 10 had vomiting and diarrhea both, 6, in age from 2 to 10 mos., were in atrophic condition.

In the chronic catarrh Dr. Cl. got good results in 5 out of 7 cases—rapid improvement of the stools and increase in weight without any medicaments.

The results in acute cases were fully as favorable, when stomach or intestines alone were affected. In the gastro-enteritis, 3 cases died, 7 were improved, some of the latter surprisingly rapidly.

Of 3 healthy children, to whom the mixture was given, 2 thrived well, the other, coming from a scrofulous family, became rachitic and scrofulous.

The preparation of the food is easy for an intelligent house-wife, but it is rather expensive.

J. F., JR.

**2. Oscar Silbermann (Breslau): Infantile Peritonitis** (*Jhrbch. f. Kindhkd.*, XVIII., 4).—Peritonitis in infancy is not marked by the clear and characteristic symptoms which it presents in adult life. Opinions about it are varied, but all agree that it is most frequent in very early life.—Thus, of 186 fatal cases in the first year of life, 102 were in the first two weeks and 62 in the next two. There are two varieties:—1. A non-septic (chronic) form, and 2. A septic (acute) form.

The non-septic form develops usually early in fetal life and its most important cause is undoubtedly syphilis. The children are either born dead and often partially macerated, or they die shortly after birth with symptoms of marasmus. In the latter case the striking appearances are the aged face and drawn and decrepit appearance, the distended abdomen, more or less ascites, spleen and liver enlarged, respiration rapid and pulse small, extremities cool, cyanosis. It is, however, not always limited to these symptoms, but often, by involving the intestines and their coverings, leads to atresia ani, and sometimes stenosis or complete atresia of the small intestines. The author reports an interesting case of this latter kind.

In considering the septic, or acute form, the author makes a further subdivision into two classes, both of which usually depend on infection through the navel. The first is general septicæmia, of which the peritonitis is only one symptom, and which does not interest us here. The other is peritonitis appearing as the single and only effect of septic infection and characterized by clear features. In the midst of apparent health, the children become restless, cry, refuse the breast, begin to fall away and the pulse and respiration rapidly increase. The prodromal appearances may, however, be wanting and then we have at once vomiting, sharp diarrhea, meteorismus, tenderness of the abdomen, frequent respiration, very rapid pulse, and intense icterus. After a few days, or even hours, the extremities become cold, the pulse small and imperceptible, and the child dies in collapse. In some cases the symptoms are less stormy and pass over in a few days (Quinquaud's "abortive form"). With such clear symptoms, with septic disease of the mother or septic

appearance of the navel, it would seem that there could scarcely be any difficulty of diagnosis. The author, however, takes up the separate symptoms and shows that hardly one of them is constant. The vomiting may be absent, there may be constipation instead of diarrhea, meteorismus occasionally is wanting, exudation is always present, but is sometimes so slight that, especially if there is meteorismus, it cannot be detected, tenderness of the abdomen occurs in other diseases also, pulse, temperature and respiration may offer the same variations from other causes, etc., etc. The rapid loss of weight is one of the most unfailing symptoms. The only other disease which causes this so rapidly is a severe dyspepsia, with which in fact a peritonitis is most likely to be confounded, especially if it occur late, after the umbilical wound is closed. The author does not give the points of differential diagnosis.

The treatment of septic peritonitis is first of all prophylactic. The umbilical wound must be kept perfectly clean and the child removed from the mother if she shows any signs of septic trouble. For the high fever, quinine and Priessnitz' compresses—never salicylic acid, which may cause severe collapse. For the vomiting, chloral hydrate (1.0-2.0 *ad* aquae 100,—teaspoonful hourly). To keep up the strength, stimulants are necessary and the author especially recommends green tea and rum-water which is often well borne when every other drink, and especially wine, is constantly vomited. Opium and cold are contraindicated, as causing collapse. The prognosis is bad, but this must not deter us from using every means at hand.

J. F., JR.

**3. Preyer: On the First Respiratory Movement of the New-Born Infant** (*Zeitschr. f. Geburtshlf. und Gynäkol.*, VII., 2).—With a little practice in palpation, the head of a fetus can be easily localized in the uterus of a pregnant guinea-pig. By cutting down upon it suddenly so that the mouth is exposed to the external atmosphere, respiration will ensue in less than a minute, irregular, but unaccompanied by dyspnea, and any rude touch will evoke a deep inspiration or even an expiratory cry. If, five minutes later, the fetus is rapidly extracted and decapitated, the lungs will float on water. When the umbilical vessels are rapidly exposed during this period of intrauterine respiration, we will find the umbilical vein of a bright red arterial hue, and if respiration has gone on long enough, the blood in the umbilical artery will already be much brighter than usual. This shows that circulation and respiration in the placenta go on undisturbed.

This simple fact also renders untenable the position of those who have attributed the cause of the first respiratory movements in the newly-born to a hunger for oxygen or lack of oxygen in the fetal blood, or to the interruption of placental circulation by its becoming more venous, or to the accumulation of carbonic acid (which was never demonstrated). It opposes another hypothesis, which assumes that the sudden cooling off of the body after birth irritates the peripheral extremities of the cutaneous nerves, thereby exciting the central origin of the inspiratory nerves. For in these experiments no falling of the temperature occurred and still inspiration took place. A third theory, which seems *prima-facie* in accordance with these results, which declares contact of the respiratory tract with atmospheric air to be indispensable, does not agree with another experiment, *i. e.*, if a solution of fuchsine is injected into an ovum and



the fetus violently irritated from without, it will make strong respiratory movements and the lungs will be found full of the solution. Besides, how can air penetrate into an atelectatic lung if has not been unfolded before? First we must have an inspiratory irritation and then enters the air.

But what constitutes an inspiratory irritation? First and most important is irritation of cutaneous nerves, whether it is accompanied or not by sudden cooling off of the surface of the body, or by disturbance of placental circulation or by admission of air. But it is a mistake to assume, as has hitherto been done by many, that the change of fetal blood from arterial into venous at birth is another of the principal factors. For we can cause inspiration to take place in the chick just before birth by a needle-thrust, electric shock, etc. It is, however an adjuvant of some importance, as the venous character of the blood renders the respiratory centres susceptible to an irritation which before that would have been too feeble. The first inspiration, therefore, is, like all the following, of purely reflex nature.

Author maintains and proves by experiments, contrary to Schwartze and others, that there is constantly present, even when placental circulation is intact, a certain amount of reflex irritability, which, however, must be developed to a high degree before peripheral irritation will give rise to inspiratory movements. Especially when the quantity of oxygen in the fetal blood is diminished will centripetal irritation be more apt to excite respiration. It is true that intrauterine respiration may take place with aspiration of fluid without injury to the embryo, but this can only occur when placental circulation is interfered with and reflex irritability is highly developed. By experiment it has further been proven that the volume of irritation is in inverse ratio to the irritability, i. e., an irritation of the skin which will barely suffice to produce an inspiration in the fetus in a normal state is feebler the greater the irritability of the respiratory centre is, but this again is the greater the less oxygen the blood contains and *vice versa*.

We may therefore conclude: The first inspiration necessitates peripheral irritation. Reflex irritability of the respiratory centre is insufficiently developed in utero with normal placental circulation to admit of normal intrauterine cutaneous irritation to produce an impression. But it can be intensified by a diminution of the quantity of oxygen contained in the fetal blood so that such an ordinary irritation can give rise to a premature reflex inspiration often without damage to the fetus. We can produce respiration artificially without an increase of central irritability or diminution of oxygen by intensifying peripheral irritation and this respiration will merge into normal respiration without injurious consequences after tying cord.

W. T. KUDLICH.

**4. Uffelmann (Rostock): The Results of the Children's Institutions for Salt Baths** (*Deutsch. Med. Wochschft.*, No. 44).—Prof. Uffelmann has collected the reports of the various institutions for the treatment of children by salt baths (Soolbäder, baths in water impregnated with natural rock-salt) and draws these general conclusions. From 15–38% of scrofulous, weakly and rachitic children were completely cured; 23–30% more were greatly benefited, the improvement showing generally in marked increase of weight; from 5.5–20% were unimproved. The duration of

treatment had most decided influence upon the results. All reports agree that the forms of scrofula which yielded most rapidly and permanently were the affections of the skin and eyes. Slight glandular enlargements were readily cured, but hardened groups of glands yielded slowly, scrofulous bone and joint affections needed long and repeated courses of treatment, but then showed great improvement or even complete cure. The results of the treatment in diseases of the respiratory organs are still unsettled. In cases of simple chronic catarrhs it is certainly satisfactory and some institutions report really surprising results in highly suspicious affections, such as chronic infiltration of the lungs and catarrh at the apices. All agree that decided phthisis is not only not improved, but really made worse. Rachitis is generally improved, but only occasionally cured.

General weakness is much improved or entirely cured—as is also the case with chronic skin affections which are non-scrofulous.

When these results are compared with those of the sea hospitals, it is seen that the latter make a better showing. Their percentage of cures varies from 34–61%, the average being about 50%. They, however, retain their patients for longer periods. The forms of scrofula which are most successfully treated in the sea-shore institutions are the simple torpid affections, located mostly in the glands. Skin eruptions prove very obstinate, while in the soolbäder they yield rapidly. Affections of the eyes are generally rapidly healed, but make frequent relapses. In the baths they also heal rapidly and do not so often return. Yet some cases of eye affections which have been treated in the baths without any good result have been rapidly cured at the sea hospitals. In the bone and joint affections the results have been about equal and seem to depend mostly on the duration of treatment.

The sea hospitals—especially in North America—have given most excellent results in cases of intestinal catarrhs, both acute and chronic. This class of cases has not been treated to any extent at the baths. The results in the two courses of treatment in case, of chronic catarrh of the respiratory tract seem to be about equal. The sea air is better for phthisis, but neither treatment seems to be entirely suitable for it.

Constitutional weakness and the debility which follows long and severe sicknesses is greatly improved in both kinds of institutions, the sea air perhaps giving some advantages to the institutions situated on the coast. Rachitis is in both places generally only improved.

In conclusion the author makes two suggestions which are worthy of notice. The first is that all the institutions should adopt a like schedule for recording cases, so that the reports could be better compared. The other is that physicians or parents sending children to such institutions should always send with them a good history of their previous conditions, sicknesses, etc.

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**5. Lœri (Pesth): The Pathological Changes in the Throat, Larynx and Trachea in Acute Infectious Diseases** (*Jahrbch. f. Kindhilkde.*, XIX. B., 1 H.).—The author's article is long and full of detail, but we may cull the principal points:—

**MORBILLI.**—The changes are greater and more frequent than in the others fevers. They are partly identical with the external eruption, partly those which precede, accompany, or follow it. They are: Hy-

peremia, occurring usually twelve to thirty-six hours before the eruption and being either diffuse or macular, rarely papular, and having little diagnostic value; exudation on the membranes of throat, larynx and trachea with exfoliation of epithelium, most marked in larynx and trachea; ecchymoses, very rare; catarrhal ulcerations, generally in the upper part of the larynx; follicular ulcerations; and larynx-diphtheritis. This the author considers quite frequent. It occurs at any period of the morbilli and there seems to be a predisposition to it in families. Already existing disease of the larynx and trachea is not influenced by morbilli.

*Prognosis.*—Very acute catarrh is dangerous in very young children. Otherwise the severity of the exanthema is of no prognostic value.

*Treatment.*—Nothing but good care. Avoid expectorants. If catarrh becomes chronic, mild astringents may be used. In case of stenosis, tracheotomize. The treatment of diphtheria is discussed at length and most of the ordinary remedies classed as useless, the author relying principally on tonics, food and stimulants, and disapproving of most of the present methods of local treatment.

*SCARLATINA.*—Preceding the eruption on the surface, affections of the pharynx are as frequent as in morbilli, affections of larynx and trachea are rare. The redness of the throat is either in spots or diffuse. There may be intense swelling of the palate and uvula, slight ulcerations, herpes on lips and gums, abscesses in the throat, follicular or parenchymatous tonsillitis or, most frequently of all, diphtheritis of the pharynx. This occurs most frequently from the third to the tenth day and differs from the diphtheritis of morbilli and genuine diphtheritis in that its tendency is scarcely ever to extend downward into larynx and trachea, but, if it advances in any direction, to attack the mouth, gums, etc. Gangrene of the mouth and throat membranes is happily rare.

*Prognosis.*—The occurrence of phlegmonous and diphtheritic complications points to severity of the poison and a larger mortality percentage.

*Treatment.*—No local treatment is of prophylactic use. Abscesses should be opened early. In case of gangrene, antiseptic washes should be used.

*RUBEOLA.*—General hyperæmia of the membranes.

*VARIOLA.*—No changes in the prodromal stage. At the appearance of the external eruption, there is hyperemia of the membranes with variola pustules on the soft palate and in the trachea. These are smaller than the external pustules and run a rapid course. They sometimes occasion phlegmonous inflammation—in one case retropharyngeal abscess. Submucous hemorrhages and diphtheritis are not rare. Three other affections are noticed, perichondritis, edema of the larynx, and paralysis of the laryngeal muscles.

*Prognosis and Treatment.*—The catarrh needs no treatment. Pustules on the vocal cords may attain to such size as to cause suffocation, in which case they should be immediately opened. When ulcerations remain after the collapsing of the pustules, astringents should be used. Submucous hemorrhages point to larger ones and ice and tannin are indicated. Perichondritis is a threatening complication. Cold applications and early opening of abscesses must be our rule. The same applies to edema of the larynx. The paralysis needs no treatment.



**VARICELLA.**—Occasional y one to three pustules.

**TYPHUS.**—In both abdominal and exanthematic typhus the most frequent affection of the membranes is acute or chronic laryngeal catarrh. This often leads to ulcerations which may cause loss of voice, difficult respiration, etc. Diphtheritis is rare and the false membrane always thin, but when it occurs it is apt to be followed by paralysis. Perichondritis and edema of the larynx sometimes occur and are almost always fatal.

**PERTUSSIS.**—The author has studied the changes caused by this disease in hundreds of children. Laryngeal examinations were made almost daily throughout the disease. Pertussis is always preceded by a more or less extended catarrh of the larynx or trachea or, more rarely, the pharynx. This usually persists throughout the disease, but often will disappear for a time so that absolutely nothing abnormal can be seen, and then again reappear. Slight hemorrhages, ecchymoses, and ulcerations of the larynx occasionally occur. Edema of the larynx is rare. Diphtheritis is very rare.

**Prognosis and Treatment.**—As the catarrh has a tendency to extend downward it should be locally treated. The author's results have been excellent. He uses insufflations of: Morphini muriat., 1; Zincum sulph., 2; Alumin., 12; from 1-10 centigrammes blown into the throat once a day. The other complications are to be treated as in the other fevers.

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**6. Wertheimber (Munich): Ulcus Ventriculi Simplex** (*Jahrbch. f. Kindhikde.*, XIX. B., 1 H.).—Dr. Wertheimber reports a case of the above in a child of 10 years of age! The preceding symptoms, the course of the disease (its acute stage being brought on by a jump from a height), and the results of treatment leave no doubt whatever of the correctness of the diagnosis. The interest of the case is in the child's age. Hemorrhagic infiltration of the gastric membrane often occurs in children, but ulcer, especially the true perforating ulcer, is the greatest rarity. G. Budd states that "the observations yet made do not enable us to explain how it is that the ulcer hardly ever occurs under the age of 16." (On the Organic Diseases of the Stomach, London, 1855.) He has only seen one case in a person under this age (14½ years) and the best authorities state that it almost never occurs under 14. Brinton, out of 226 autopsies in cases of ulcer of the stomach, found *two* under 10 years of age.

The treatment in this case was by rest, ice, and milk diet. The cure was complete in five weeks.

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**7. E. Pfeiffer: Lactin and Paulcke's Milksalts** (*Berlin. klin. W.*).—The author found that cow's milk treated by these preparations remained unchanged in its relation to muriatic acid and pepsin and was not made more like woman's milk, but curdled in greater flakes than milk diluted with barley water. The constituent change in milk by the addition of these substances was simply the same as by the addition of 12-15.8 grm. milk sugar in ¼ L. water to every ½ L. milk. Dr. Pf. regards the recommendation of these preparations as a panacea in the nourishment of children as "at least naïve."

J. F., JR.

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ORIGINAL COMMUNICATIONS.

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THE TOPOGRAPHICAL RELATIONS OF THE FEMALE PELVIC  
ORGANS.

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Part I., with six woodcuts.

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THE art of gynecology, in contrast with some other departments of medical science, is one of comparatively recent date. With the growth of this branch and the development of certain surgical procedures, which seem destined to surpass in their results even the most sanguine expectations of those who first devised them, has arisen a feeling of desire on the part of most surgeons in this special field for an accurate and complete description of the parts which come more particularly under their observation. There is, I believe, a realizing sense among the profession that anatomy has not kept pace in its growth with the other departments of gynecology. It is true that the microscope has enabled some investigators to add much to our knowledge of the minute structure of various tissues which compose the pelvic organs; and the description of the general

contour and construction of these organs has been worked out in some detail by most of our leading anatomists. Nevertheless it is a fact which cannot be disputed by any one familiar with the literature of the subject, that the *topographical* descriptions of parts most essential to a practical gynecologist are as yet largely a matter of dispute even among authors of acknowledged reputation.

In this special department of surgery, anatomy has a most important bearing upon successful treatment. As we pass inward, in our investigation, from the tissues which help to form the pelvic floor toward those which enter into the formation of the vagina, uterus, Fallopian tubes, ovaries, urethral canal, bladder, and rectum, not to speak of the various fasciæ, the pelvic cellular tissue and peritoneum, the ligamentous structures connected with the organs mentioned, and the blood-vessels, lymphatics, and nerves, it is impossible to single out one which is not to-day an open field for scientific discovery and which cannot suggest to the progressive student many points that are of practical value.

I think it may be claimed, without saying more than facts will apparently justify, that the anatomy of the pelvic organs and the various structures in intimate relation with them is more difficult than of that of any other topographical region of the body. The physiological functions which these parts are called upon to perform—requiring as they do an inherent mobility without a liability to displacement, a capacity for marked alteration in their relations to each other during the pregnant state without endangering their subsequent return to the normal standard, a strength and elasticity which shall enable certain parts to sustain the weight of super-incumbent organs without damage to the important parts in the neighborhood of the pelvic brim, an apparently open pelvic floor which shall resist all tendency to hernial protrusions of the organs supported—all these and many other evidences of the wisdom of the Creator must strike the most superficial student of anatomy with awe, which is heightened rather than decreased by careful research.

It is with a full sense of the responsibility of the task before me that I attempt to present to the profession a *résumé* of what I believe to be the true anatomy of the regions which properly



pertain to the department of gynecology. In addition to my own researches in this field, made some years since upon the cadaver, and lately in the autopsy rooms of hospitals, I shall bring to my aid all that has been done in the same field by those more competent than myself—endeavoring to do full justice to their opinions, but reserving the right allowed each author (which I trust will be used in an unprejudiced and impartial spirit), of careful discrimination between what seems to me to be established fact and unsupported theory.

The anatomy of the pelvic organs (to be thoroughly grasped by the comprehension in order that it may be applied to various diseased conditions) must be so presented as to faithfully portray not merely the tissues which form special parts, but also the relations which each bears to those in its immediate vicinity. Thus it becomes necessary to know not only where the viscera are situated, and their modifications in the state of health (since some are displaced at times by the distention of neighboring organs and by other physiological processes), but also the exact position of all the structures which are associated with each, either by simple contiguity or its physiological functions.

If we critically examine drawings, found in standard textbooks, which are supposed to portray accurately the parts which they are intended to represent, it must be apparent to all that some must be grossly inaccurate; since it is difficult to find any two which agree in all important points. The same criticism may be made, although perhaps to a less degree, as to representations given in some of the more recent and scientific monographs upon the subject. If we seek to explain these apparent discrepancies only on the ground of lack of care in the drawing<sup>1</sup> or inaccuracy in the dissections made, a serious injustice may, in many instances, be done to some authors whose skill as anatomists must be above question, and to artists whose fidelity to nature is well known. It will be my unpleasant duty to differ widely from some in my conception of the topography of the pelvis in its antero-posterior median section, and to criticise the drawings of others as grossly incorrect; I may be pardoned, therefore, for an attempt to explain what to my mind

<sup>1</sup> The inaccuracies which exist in some cuts and plates (often referred to by authors in commendatory terms) are so gross as to merit severe censure on this ground.

are the chief causes which conduce toward error in description and proper delineation of the pelvis and its contents.

CAUSES OF ERROR AS TO THE ACCURACY OF EXISTING PLATES AND CUTS.—In the first place, I believe that too great reliance should not be placed upon the accuracy of any *dissection*, as a step toward determining the relations of these organs. The tissues of a cadaver have lost many of the essential elements which live tissues possess—chiefly their elasticity—and thus the weight alone of the super-incumbent structures and the formation of gases in the intestine may assist in creating a displacement of the organs which are being investigated, from their normal surroundings. Again, the fact that attitude has a disturbing influence upon these organs is well known; and no dissection of a body made in the recumbent posture is a proper guide for a drawing intended to portray the normal position of the viscera in the erect attitude. As an illustration of this fact, I have discovered that, in several of the most universally quoted works upon the subject, the pictures represent the woman as in the standing posture, and yet the pelvis is shown in a greatly distorted position in reference to the angle which it should normally make with the spinal column, while the sacrum and pubes are also incorrectly placed. No one believes to-day that the vagina is an open tube in the erect attitude of the woman, or in point of fact in any other posture, either during life or after death; and yet how often do we see it so depicted in cuts of supposed merit. I can conceive of no better way to determine the ramifications of a fascia, the attachments of a muscle, or the course of a nerve or blood-vessel, than by dissection; but, if plates (as usually made from carefully prepared dissections) are to be considered as faithful portraits, this plan of instructing the surgeon as to topographical relation seems to me comparatively worthless, in case the parts examined are extremely movable or liable to be disturbed from their normal relations to adjacent structures. Finally, it is absolutely impossible to expose some of the pelvic viscera without dividing structures which are essential to the maintenance of their normal relations to neighboring parts; hence dissections are in themselves a source of decided error in many instances, even if carefully prepared.

Of late, an attempt has been made by some investigators to

eliminate these sources of error by freezing a corpse and then making sections which can be duplicated by photography. This is an unquestioned improvement upon the old method by dissection, but it is open to many of the objections previously made. The tissues have not only lost their elasticity by death, but they may possibly have been distorted by the action of intense cold. The recumbent posture was probably that in which the subject died—certainly that in which she must have, of necessity, been laid immediately after death—and we have no reason to believe that the organs of the pelvis will ever regain their normal position and relations to surrounding parts in a corpse, when the weight of the abdominal viscera and the action of gravity have probably displaced them. This will not be insured even after the body has been placed in the “knee-chest” position (as has been done by some of the later investigators)—probably after a prolonged dorsal decubitus. I do not totally decry this method of research, as I deem it of great value for some purposes; but I am loth to accept the sections so represented as an absolute exposition of the organs of this region in the state of health.<sup>1</sup>

Finally, I believe that much error in the future drawings of the antero-posterior median section of the pelvis is to be eliminated by a more extended series of investigation upon the living subject than gynecological literature as yet can produce. It is most certainly possible, by methods which have already been published in some detail,<sup>2</sup> to determine many of the essential measurements, upon which a drawing of the pelvis could be constructed, which would, to my mind, be far more accurate than any which have been produced by either of the two methods previously discussed. Such a schematic drawing as that to which I shall call attention later, certainly seems to be based upon a ground more worthy of credence, as a faithful representation of the pelvic relations, than a mere photograph of a section, into which probable grounds of error have unavoidably entered. It is not unworthy of the consideration of those who possess the means of recording large numbers of

<sup>1</sup> No two frozen sections can be found which agree in all particulars. Some present extremely wide variations; thus demonstrating the justness of my criticism.

<sup>2</sup> See articles of Schröder, Foster, Schultze, Martin, and others, mentioned in the bibliography.



carefully made measurements in their hospital practice, to begin at once such a series of experiments as shall tend to settle many points in anatomy as yet in dispute, and to place the knowledge of the topography of these parts upon a more scientific and reliable basis.

RELATIONS OF BONY POINTS TO EACH OTHER.—In studying the pelvic viscera, most of the points of controversy between authors of note as to the topography of the pelvic contents may be shown in an antero-posterior median section; hence, this is by far the most important view of the female pelvis. It is especially important, therefore, in endeavoring to construct a schematic diagram of this section, that the bony structures of the spinal column, sacrum, and pubes, be first represented as closely as possible in accordance with the researches of Litzmann, Duncan, Braune, Pirogoff, Le Gendre, and Fürst,<sup>1</sup> before any attempt be made to depict the relative position of the pelvic organs. There seems to be little if any ground for adverse criticism of the drawings of Litzmann, which portray the normal relations of the bony points of the female pelvis (as deduced from a large and careful examination of many selected specimens); and his plates may well be taken as a model for this part of any schematic drawing. Since, to my regret, the limits of this article will preclude the discussion of the bony points of special interest in the pelvis, I quote for the benefit of the reader the admirable table of Foster in which he contrasts the measurements of some of the authorities above mentioned with those of Litzmann, in support of the accuracy of his own schematic drawing, made to illustrate the normal topography of the pelvic viscera.

Such a table is of value, moreover, in estimating, in any given case, the amount of deviation of the pelvic measurements from the normal standard.

<sup>1</sup> The plates of Savage, and the cuts found in Thomas, and most of the later works upon gynecology are *grossly incorrect* (in respect to the outlines of the sacrum and pubes) in representations of the sagittal pelvic section. In Savage's work, the sacrum in its thickest portion is  $\frac{1}{2}$  of the antero-posterior diameter of the superior strait; the tip of the coccyx lies far below the plane of the lower edge of the pubes, when it should be above it; and the sacral canal is inclosed by bone for its entire length.

MEASUREMENTS OF THE FEMALE PELVIS IN CENTIMETRES. <sup>1</sup>	Foster.	Litzmann.	Fürst.	
			Average.	No. of pelvises measured.
Promontory to upper border of symphysis pubis.....	11.7	11.4	11.7	19
“ “ nearest point “ “ .....	11.0	11.0	10.6	19
“ “ lower border “ “ .....	13.3	13.0	12.9	19.
“ “ middle of third sacral vertebra.....	6.9	7.3	6.8	13
“ “ sacro-coccygeal joint .....	10.8	10.8	10.3	9
Sacro-coccygeal joint to tip of coccyx.....	3.8	3.9	3.3	10
Promontory to tip of coccyx.....	11.6	11.6	11.7	19
Highest to lowest point of symphysis .....	3.8	3.7	5.0	19
Upper border of symphysis to upper border of third sacral vertebra .....	13.5	12.3	13.5	16
Lower border of symphysis to sacro-coccygeal joint..	12.5	10.8	10.9	9
“ “ “ tip of coccyx.....	9.2	7.4	9.1	19
Upper “ “ middle of third sacral vertebra .....	13.9	12.7	13.7	13
“ “ “ spin. process of last lumbar vertebra .....	18.8	....	16.9	12
Promontory to spinous process of last lumbar vertebra	7.6	7.6	6.0	12
“ “ vertically to line from upper border of symphysis to spine of last lumbar vertebra .....	3.2	....	1.5	12
Tip of coccyx to horizontal line touching lower border of symphysis.....	2.0	....	2.4	19
Promontory to horizontal line touching lower border of symphysis.....	12.7	....	13.4	19
Horizontal distance of angle of sacrum from line falling vertically from promontory.....	7.5	....	6.9	19
Horizontal distance of middle of third sacral vertebra from line falling vertically from promontory.....	5.9	....	5.7	13
Horizontal distance of sacro-coccygeal joint from line falling vertically from promontory.....	7.3	....	6.6	9
Horizontal distance of tip of coccyx from line falling vertically from promontory.....	4.5	....	6.8	19
Middle of third sacral vertebra to sacro-coccygeal joint	4.5	4.4	4.7	8
Upper border of symphysis to that portion of it nearest to promontory.....	1.1	0.7	1.4	19

SITUATION OF POINTS OF SPECIAL INTEREST BETWEEN THE COCCYX AND THE SYMPHYSIS PUBIS.—It is absolutely essential, in order to properly construct a diagram of the topography of the pelvic viscera (*from measurements made upon the living subject*), that the soft tissues which intervene between the tip of the coccyx and the symphysis pubis be correctly represented in their relations to the bony outlines. It would

<sup>1</sup> The measurements given in the first column are those of Foster's original drawing; the *proportions* only are preserved in his reduced cut, originally published in this JOURNAL.

be a matter of less importance if these parts were not the subject of great differences of opinion between authors of note, and one which must be determined with the greatest care before the internal organs can be properly placed in a schematic drawing, in their normal relations to each other. There is perhaps no point in which antero-posterior median sections of the pelvis (as depicted in drawings generally

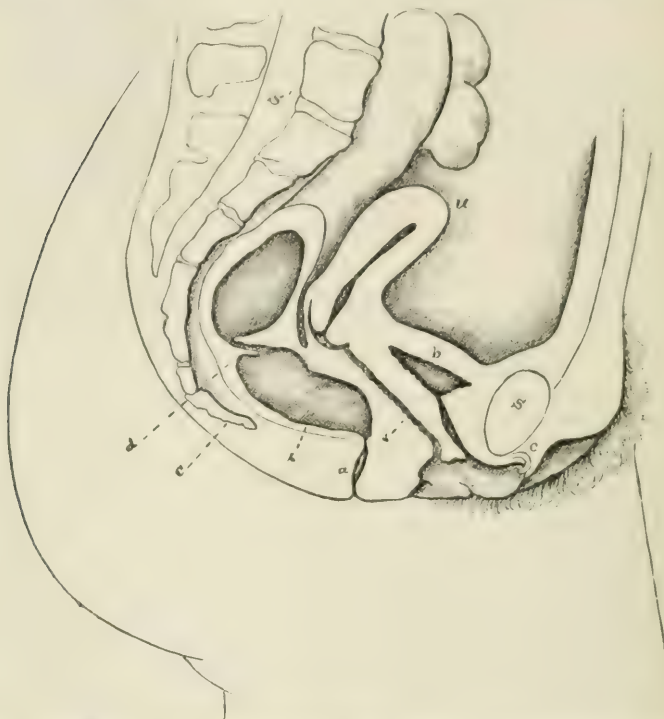


FIG. 1.—A diagram of the sagittal section of the pelvis of a living woman (modified from Foster), *a*, anal canal; *r*, rectum; *v*, vagina; *c*, clitoris; *b*, bladder, when collapsed; *u*, uterus; *d*, valves of the rectum (Houston); *S*, symphysis pubis; *S'*, sacrum; *C*, coccyx.

accepted) show greater points of difference than in the region which embraces the anus, the perineal body, the various features of the vulva, the vulvo-vaginal orifice, and the meatus urinarius, as we pass from the tip of the coccyx forward. The relative situation of these parts, and the extent to which they project during life beyond the plane of the outlet of the pelvis, have been made a subject of special investigation by Schröder, Schultze, and Foster.



In the discussions which have taken place between the two authors first mentioned, as to the accuracy of their respective drawings, the frozen sections of Braune and Rüdinger were utilized by Schröder as conclusive evidence of the fidelity to nature of his own drawing. He claimed further that the accuracy of the drawing was sustained by the measurements which he had made upon the living subject.<sup>1</sup> It remained, however, for Foster, in an admirable paper published a few years ago, to demonstrate that the measurements of Schröder were faulty, from a defect in the method pursued by him; and to call attention once more to what he considered an improvement upon all previous methods of determining the normal relations of these parts to each other. The position of Foster was strengthened, some time before the appearance of the article referred to, by a similar criticism on the part of Schultze, who pronounced the method employed by Schröder as defective (so far as the deductions drawn concerning the projection of the soft parts beyond the plane of the pelvic outlet were concerned), from an oversight in the non-elimination of the thickness of the skin which covers the tip of the coccyx and the symphysis pubis.

It would add greatly to the value of this article if the methods employed by each of these three observers could be given in detail; but lack of space precludes more than a summary of their conclusions. Schröder places the extreme distance of projection of the soft parts beyond the plane of the pelvic outlet, in the nulliparæ, at 4.1 cm.; while Foster, on the other hand, considers 2.5 cm. as the average of this projec-

<sup>1</sup> Foster's measurements refer to subjects placed in the semi-prone posture, and Schröder's are not stated to have been otherwise made: this posture would tend to slightly diminish the extent of projection of the pelvic floor beyond the plane of the pelvic outlet from that which would exist in the erect attitude.

In pregnancy, *the pelvic floor projection is increased* in proportion to the weight of the enlarging uterus.

The "sagging" of the pelvic floor, observed in many of the frozen sections of the pelvis through its sagittal diameter (see those of Pirogoff, Fürst, Braune, and others), tends to support my view that death inevitably destroys to a greater or less extent the topographical relations of all the pelvic structures. Schröder has endeavored to justify his averages by measurements upon the frozen subject: a step manifestly illogical, since it is opposed by weighty objections. Foster and Schultze have probably placed the average more nearly in accordance with accuracy.

tion. Two separate tables of Schröder have been combined by Foster, to show the other measurements of this author, for the purpose of contrasting deductions made by himself, as the result of measurements on a much larger number of subjects by his improved method. I quote this compiled table of Schröder's measurements, in order to show the points of dispute between these two observers.

Measurements of Prof. Karl Schröder of Erlangen.	Distances from tip of coccyx to					
	Anus.	Fourchette.	Meatus urinaris.	Clitoris.	Lower border of symphysis pubis.	
	By tape measure.					By calipers.
Average of the pregnant women....	CM. 5.65	CM. 8.75	CM. 12.9	CM. 15.45	CM. 13.35	CM. 9.15
“ “ gynecological patients....	5.4	8.3	12.0	14.5	12.6	8.29
“ “ nulliparæ.....	6.	9.	12.2	14.6	13.2	8.75

It will be perceived that the measurements made with the calipers (in the table of this author, as well as in those of Foster and Schultze) differ markedly from those made with the tape; since the actual distance between points in a straight line is determined by the former, and a section of the perineal curve by the latter method.

The *situation of the anus* from the tip of the coccyx, as the average of his measurements, is placed by Schultze at 5.9 cm.—33 women having been used as a basis of this deduction. Foster, however, places the average of 67 nulliparæ at 4.5 cm., and of 105 women who had borne children at 4.7 cm. from the tip of the coccyx. Both of these observers put their average distance below that of Schröder; yet the marked discrepancy between the average of Foster and that of the two other observers is due to the employment of the æsthesiometer in place of the tape; because the arc was measured by two, and the direct line between the points by one only. The method employed by Foster seems to me to be not only the most accurate, but also the best adapted for record upon a chart, or for use in the construction of a schematic drawing of the pelvis; hence

I quote the deductions, drawn by him from the same number of observations, respecting those other points between the coccyx and the symphysis where error is most likely to occur when making a chart, as regards their proper position and outline.

"The distance from the *anus* to the *fourchette* averages 2.7 cm. in nulliparæ, and 2.5 cm. in women who have borne children. Now, we have already seen that the distance from the tip of the coccyx to the anus averages 4.5 cm. in nulliparæ, and 4.7 cm. in women who have borne children. Expressed more graphically :

	Tip of coccyx to anus.		Anus to fourchette.		Tip of coccyx to fourchette.
"Average in nulliparæ,	4.5 cm.	+	2.7 cm.	=	7.2.
" "women who have borne chil- dren,	4.7 "	+	2.5 "	=	7.2.

"As to the other features of the vulva, I regard their precise situation as comparatively unimportant, and have therefore made but few observations bearing upon them. My impression is, that the upper or anterior extremity of the *vulvar fissure* is generally situated about opposite the middle of the symphysis pubis, or somewhat above this point.

"The *meatus urinarius* I have found in very few measurements to range from 0.7 to 2.2 cm. distant from the lower border of the symphysis pubis, and from 2 to 2.5 cm. from the fourchette in nulliparæ, and from 2 to 3.1 cm. in women who have borne children."

The same observer also states that his measurements showed that the *tissues about the anus* were the seat of the greatest projection from the line of the pelvic outlet. All of these measurements were made with the subject in the Sims' posture.<sup>1</sup>

<sup>1</sup>The researches of the three authors quoted above are a sufficient ground for adverse criticism of many drawings found in gynecological literature. They may also be used to sustain the author's position in reference to the non-reliability of frozen sections of the pelvis. A careful comparison of many such sections reveals the fact that the outline of the tissues which form the pelvic floor has been unavoidably distorted, either by cold or by loss of their muscular tonicity. Unusual stress is laid upon this point, because it is popular, of late, to decry any drawing which does not agree with some special frozen section that happens to coincide with the views of the critic.



By means of the data thus given, it is possible to construct a chart which shall represent the normal relations of the sacrum, coccyx, and pubis, in an antero-posterior median section of the pelvis, with a greater approach to accuracy, to my mind, than most of the plates now in existence exhibit; and to fill in the outline of the soft parts, which lie between the tip of the coc-

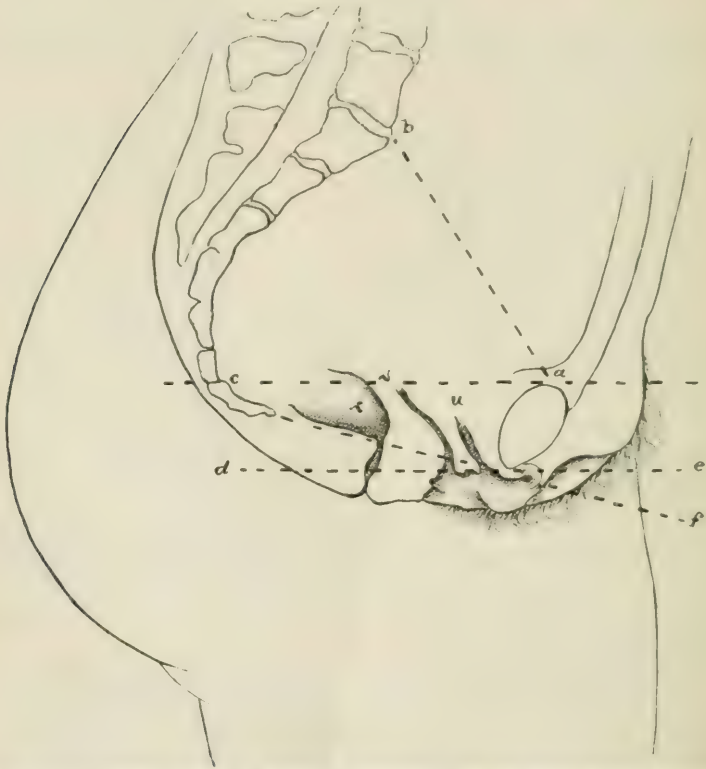


FIG. 2.—A diagram designed to show the planes of the female pelvis and the outline of the soft tissues which help to complete the pelvic floor. *a-b*, plane of pelvic brim; *a-c*, horizontal plane intersecting upper border of the symphysis; *d-e*, horizontal plane intersecting lower border of symphysis; *c-f*, plane of pelvic outlet; *u*, urethra; *v*, vagina; *r*, rectum.

cyx and the symphysis pubis, as they normally exist in the average Caucasian woman. A complete outline, not only of the bony walls but also of the soft structures at the pelvic outlet, may prove of great service in many ways. It will enable each observer to place the pelvic organs, in any case under his

special notice, in their true relations to these important parts, provided proper measurements are carefully made and recorded; and it will also be of the greatest value as a basis for each observer in recording what his subsequent investigations lead him to believe to be the normal outlines of the organs which prominently appear in the antero-posterior median section of the female pelvis.

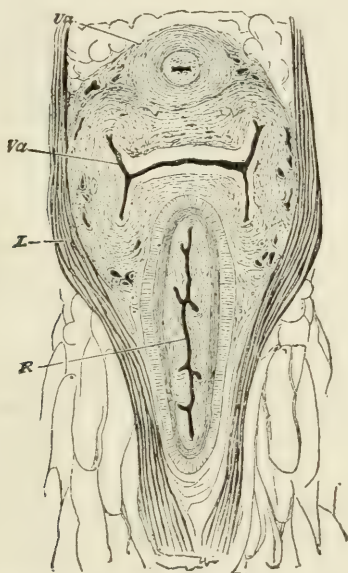


FIG. 3.—A horizontal section of the pelvic floor at the pelvic outlet above the level of the sphincters (Henle). *Ua*, urethra; *Va*, vagina; *R*, rectum; *L*, levator ani muscle. The anterior and posterior walls of the vagina come together throughout.

**THE PELVIC CANALS.**—The transverse section of the pelvis (first devised by Henle to show the normal outline and relations of the three pelvic canals, viz., the urethra, vagina, and rectum) is now accepted as accurate. It shows that the vagina and rectum are not open tubes, but that they exist, when not distended, as mere slits in the pelvic section. The long axis of the vaginal slit is transverse, and corresponds, as Hart puts it, to the mouth of the woman in its general direction; that of the rectum is directed antero-posteriorly, thus forming a right angle with the long axis of the vaginal slit; while the urethra

appears as a puckered and closed tube. These facts should be remembered in endeavoring to construct a schematic drawing of the antero-posterior median section of the pelvis, since the vagina must appear only as a line, while the rectum must occupy a broader space, because the long axis of the lumen, when it is closed, lies in the antero-posterior pelvic plane. The open anus, so commonly depicted in most of the gynecological contributions, is inaccurate, if the condition which exists during life is to be properly represented. This condition may exist in frozen sections of the pelvis,<sup>1</sup> but never during life, as any careful observer can attest, provided the sphincters of the rectum and the levator ani muscle are performing their proper functions.

THE PERINEAL BODY.—This structure, which has lately come into special prominence, forms a part of the pelvic floor, and must be drawn with its base looking downward in the erect posture of the woman, and lying between the anal orifice and the so-called "posterior commissure of the vulva." On antero-posterior median section of the pelvis, it presents, according to some authors, a triangular form, the apex of the triangle being directed upward, and interposed between the posterior wall of the vagina and the anterior wall of the rectum. It has been disputed by some that the tissue between the lower end of the vagina and the rectum has sufficient density to be properly considered as forming an apex to the perineal body, the point being made that, when two fingers are employed, one being inserted in the rectum and one in the vagina, no firm resistant body can be felt to exist between the fingers after they have each passed the thickness of the tissues which form the pelvic floor. This certainly agrees with my own observations made repeatedly upon the living female in the standing posture; moreover, many of the frozen sections of the pelvis fail to sustain the triangular shape of this body, as it appears to be rather quadrangular in form than presenting a distinct apex. Garrigues has compared its shape to the "cucurbit of an alembic."

<sup>1</sup> This is a further proof of the justness of my criticism of this method of studying pelvic topography. The tissues of a corpse can never be an infallible guide in deciding disputed points respecting the relations of organs during life.



The perineal body has been brought into prominence of late by an article which treated of its physiological functions, the accomplished author of which is certainly entitled to the consideration which has been paid by most reviewers to his researches in other departments. In this article, the perineal body is compared to the "key-stone of an arch," and its function stated to be a mechanical support to the remainder of the arch, viz., the posterior vaginal wall and the anterior wall of the rectum.

As the spirit of inquiry should always prompt an effort on the part of each observer to eliminate what seems to him an error, I may be pardoned if I endeavor to point out what seem to me to be the fallacies in the argument made in support of this theory of the wedge-like action of the perineal body.

In the first place, I would object (as the author of the paper seems to have anticipated that some one would) to the analogy drawn between this body and the key-stone of an arch. It is a principle of all mechanical devices into which a key-stone enters that its base must be directed toward, and not away from, the weight to be supported by it; otherwise, the key-stone would slip out of its own weight and the arch would fall provided that it were not supported below. Again, no arch can have any sustaining power (in excess of the cohesiveness of the materials of which it is composed) provided that its concavity looks towards the pressure which it is designed to bear, unless it be supported below; in fact, no inverted arch is ever used under such circumstances without some firm support, as a straight beam would possess an inherent strength far in excess of an inverted arch unsupported. A careful study of nature, as revealed in anatomy alone, will convince any one that the simplest mechanical means are always used to accomplish any given end. If the shape of the perineal body be accepted as triangular (and it may well be considered as yet in doubt), and the muscular tissues which help to sustain it be considered as bearing an analogy to that of a supporting sling to the "key-stone," the wedge-like action of this mass of elastic, fibrous, and muscular tissue may possibly be substantiated, provided that the later investigations of Hart, as to the physiological

mechanism of the pubic and sacral segments of the pelvic floor, do not seem to the reader to utterly disprove it.

I am personally inclined to discard the wedge-like action of the perineal body as the true interpretation of its physiological function. This structure seems to be composed of a large excess of elastic tissue intermingled with the muscular fibres of the bulbo-cavernosus, sphincter ani externus, transversus perinæi, and ischio-coccygeus muscles, and also some fibrous tissue derived from the ischio-perineal ligaments, the deep layer of the superficial perineal fascia, the perineal septum, and the deep perineal fascia.<sup>1</sup> The result of the fusion of these structures is to produce a body which shall combine a great resistant power with a high degree of elasticity, two elements most essential to this part from its situation and the strain which it is called upon to bear in the act of delivery of the pregnant female. If, as I am inclined to believe, the "pubic segment" of the pelvic floor, as described by Hart, prolonged backward to the sacrum by the addition of the uterus and the sacro-uterine ligaments, is one great factor in supporting the pelvic organs and the weight of the super-incumbent structures of the abdomen, the perineal body will, of necessity, be deprived of much of its supposed physiological interest.<sup>2</sup> But this subject will be discussed in subsequent pages.

THE HYMEN.—In the vicinity of the vulvo-vaginal orifice may be seen the hymen. This thin septum of vaginal tissue<sup>3</sup>

<sup>1</sup> See article by the author, which treats of the female perineum, New York Med. Journ., July and August, 1882.

<sup>2</sup> To show that this view is shared by some of the later authorities, who have made a careful study of the anatomy of the female pelvic organs, I quote the following sentences from the late work by Hart and Barbour, which has created considerable attention: "Its functions (that of the perineal body) are important, but have been exaggerated and underrated. It gives a fixed point for many muscles, prevents pouching of the rectum forwards, and strengthens that part of the pelvic floor which has no posterior bony support." Moreover, the plates of Braune, Fürst, Hart, Pirogoff, Kohlrausch, Waldeyer, Henle and others which have been prepared from frozen sections of the pelvis, show extreme variations in its shape.

<sup>3</sup> The hymen, as shown by Budin, of Paris, is not composed of a reduplication of the mucous membrane of the vagina, but is a structure similar to that of the vagina itself. The vaginal orifice is therefore identical with the aperture surrounded by the hymen.

is not always present, but, when so, is attached, as a rule, to the posterior portion of the vulvo-vaginal ring. It most commonly assumes the form of a semilunar fold, with its concavity looking upward toward the meatus urinarius, and an opening is thus afforded between its free edge and the anterior vaginal wall for the escape of menstrual blood. There are a number of less common varieties which may be encountered. Among these may be enumerated the "annular form," where a central aperture exists in a continuous membrane; the "cribriform variety," where several smaller openings give it a sieve-like appearance; the "imperforate variety," which completely closes the vaginal orifice and occasions retention of accumu-

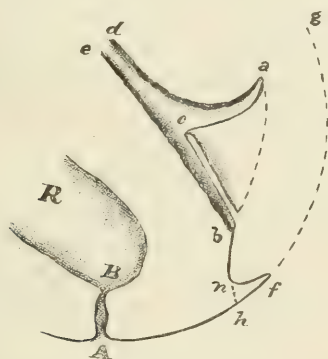


FIG. 4.—A diagram designed to show the normal position and attitude of the hymen (modified from Foster). *a-d*, anterior wall of vagina; *b-e*, posterior wall of vagina; *a-b*, attached border of hymen; *a-c*, free border of hymen; *b-c*, normal attitude of the hymen when the vaginal walls are approximated; *n*, fossa navicularis; *f*, outline of fourchette as seen when labia majora are pulled apart; *h*, dotted line showing position of the fourchette when the labia are in contact; *f-g*, outline of vulva; *A-h*, line of perineum; *A*, anus; *A-B*, anal canal; *R*, rectum. The vaginal walls are separated in this diagram to make the normal attitude of the hymen (when the walls of that tube are collapsed) more apparent. The space between the vagina and rectum is not present in nature, but is left in diagram to avoid confusion between the walls of the vagina and rectum.

lated menstrual blood; and the "fimbriated variety," which has been mistaken for a ruptured hymen on account of its fringe-like edge. This latter form has a medico-legal aspect, and its occasional existence should not be forgotten in examinations for suspected rape.

The hymen is not stretched tightly across the vaginal orifice, except when that canal is distended or its walls mechanically separated; on the contrary, it is usually sufficiently loose to lie



closely in apposition with the posterior vaginal wall when that canal is closed. This fact can be verified by introducing the finger into the vagina (when the hymen may possibly not be detected—cases being on record where copulation and the delivery of a seven-month child has failed to rupture it) and then withdrawing it with the last phalanx flexed and in contact with the posterior vaginal wall, when it will usually be caught upon the finger tip and brought into view. It is not uncommon for an existing hymen to allow of the introduction of a speculum without laceration; and, doubtless, the presence of this membrane is often overlooked from a mistaken idea of its normal position. This septum has been compared to a “jib bellied with the wind,” and crowded against the posterior wall of the vagina. Such a position of the hymen can be explained as the result of the collapsing of the vaginal walls when that canal is not distended, the posterior wall being brought into contact with the anterior by the muscular action of the pelvic floor.

It was first pointed out by Schröder that the “*carunculæ myrtiformes*,” which are described by most authors as the result of rupture of the hymen, are not (as a rule, at least) the result of sexual intercourse, but rather of child-bearing. The pressure of the child’s head as it passes over the seat of the hymen (possibly somewhat lacerated by coitus, but still present) creates a sloughing process in this delicate and poorly nourished septum, of which the isolated elevations upon the mucous membrane, called *carunculæ*, are the only remaining traces. Lusk states that in his examinations of young nulliparous prostitutes, present in hospitals, he has never found *carunculæ myrtiformes*; and I can add my own confirmation of this statement from a hospital experience confined largely to this class, and from subsequent observation.

THE VAGINA.—As has been previously stated, this canal appears as a transverse slit in that section of the pelvis devised by Henle to show the relative position and appearance of the three pelvic canals (Fig. 3). In the antero-posterior median section of the pelvis, it appears as a line only, and not as an open tube. It is often surprising, as well as amusing, to read the statement found in some of the standard text-books upon descriptive anatomy that the vagina follows and conforms more

or less to the concavity of the sacrum. It is well known that the tip of the coccyx lies above the level of the symphysis pubis when the woman is in the erect posture,<sup>1</sup> and it is now practically admitted by most of the later authors upon this subject that the vaginal canal seldom reaches much above the level of the lower end of the sacrum. It cannot be said, therefore, to have much if any relation to the sacrum; since it does not extend to the limits of the bone posteriorly, nor lie, to any great extent, within its limits as far as the pelvic cavity is concerned. Its course, which is to my mind essentially a straight one, may be found to present curves, at times, from the effect



FIG. 5.—A diagram of the vaginal slit, as seen in a sagittal section, nearly life-size (slightly modified from Hart).

*u*, urethra; *v*, vagina; *a. l.*, anterior lip of cervix uteri; *p. l.*, posterior lip of cervix uteri; *o. u.*, os uteri externum; *p.*, perineal body. The attitude of the cervix is distorted in the original frozen section, as in this cut.

of pressure, created by muscular action or by the distention of the bladder or the lower part of the rectum. Some authorities describe a normal curve in the lower part of the vaginal canal, and Thomas attributes to it a double curve, resembling the letter S, to which he believes that some of its abnormalities after a laceration of the perineal body are due; but I am inclined to think that all vaginal curvatures are the result to a greater or less extent of the action of the muscles which help to form what

<sup>1</sup> This fact would not be sustained, if many cuts incorporated in gynecological literature were to be taken as our guides in anatomical study.

Hart designates as the "sacral segment" of the pelvic floor, since the canal appears to be nearly straight in all sections of the corpse and also in subjects where the perineum is extremely relaxed as the result of marked debility. Such muscular action would tend to crowd the posterior wall of the vagina upward and forward, and thus help to produce a curve which would be wanting if the muscles were relaxed. There is every reason to believe that a certain degree of muscular tonicity in the perineum is present in every living female, if the pelvic floor is intact and the subject in good general health; in fact, the "feel" of the perineum, when the patient is in the erect posture, has been utilized by some of the later observers as a guide of value in determining the existing state of general health—a relaxed condition being an indication of a state of debility. This muscular tonicity conduces toward a close approximation of the pubic and sacral segments of the pelvic floor (see review of essay of Hart on a subsequent page); hence it is easy to account on this ground for the curve given to the vaginal canal in the drawings of Thomas and Foster, and to explain the absence of any marked curve in the plates of Savage, Fürst, Braune, Pirogoff, and others which represent the condition found either by dissection or in frozen sections of the body.

A late monograph of Hart, to whom a gold medal and the Syme fellowship were awarded for the excellence and originality of his investigations, states that that line in the antero-posterior median section of the pelvis, which marks the situation of the vaginal canal, is a boundary line between what he designates as the "pubic" and "sacral" segments of the pelvic floor. Under the former term, he embraces the structures which lie anteriorly to this line, viz., the anterior vaginal wall and the contiguous wall of the bladder; while, under the latter term, he includes the strong muscular partition which incloses the pelvic outlet, the perineal body, and the posterior wall of the vagina. These two segments, according to this author's description, overlap each other like valves. The pubic segment, being attached anteriorly and unattached behind, can be lifted over the object to be expelled through the vaginal canal; while the sacral segment, being attached behind and movable anteriorly, can be pushed backward in proportion as the vaginal canal is



to be distended. Between these two segments (the "pubic" rising, and the "sacral" being depressed or crowded backward) the fetus is expelled. In the normal state, these two segments so overlap each other as to present a pelvic floor which is practically unbroken. The power of sustaining the uterus is attributed by this author entirely to the sacral segment. He furthermore states that the vaginal canal makes an angle of 60 degrees with the horizon; and that its walls are in close apposition with each other, in all possible positions of the body. They may become separated from each other, however, if artificially opened during the genu-pectoral position, because air is then sucked into the vaginal canal; and also during the passage of a fetus, menstrual blood, etc., from the cavity of the uterus, or the introduction of the finger (during a digital examination) or of a speculum.

It has been stated, in an admirable review of this work,<sup>1</sup> that the author has lost sight of one important fact in connection with the pubic segment, viz., that the sacro-uterine ligaments are a practical extension of this segment to the posterior bony wall of the pelvis, thus transforming it into a supporting medium for the uterus, irrespective of the sacral segment. This seems to me to be a point well taken; and I would suggest that the pubic segment be made to include not only the anterior vaginal wall, and the contiguous portion of the wall of the bladder, but also the uterus itself and the sacro-uterine ligaments, since the latter are abundantly supplied with muscular fibres and must of necessity possess a contractile power. Another important point seems to me to have been lost sight of in this description, namely, that the sacral segment is continued as far forward as the symphysis pubis in all antero-posterior sections of the pelvis *except in the median line*; here the opening of the external genitals exists, and it apparently makes its termination at the so-called posterior commissure of the vulva. This anatomical fact is not made apparent in Hart's drawings of this segment, and must, to my mind, destroy all similarity of this segment to a hinged-flap, as the author would lead his readers to accept.

Instead of two flaps, the more accurate conception of the pelvic floor, as it seems to me, would be to regard it as com-

<sup>1</sup> N. Y. Med. Jour., Sept., 1881.

posed of two partitions nearly parallel with each other, the dividing line between which is the vaginal canal; the upper partition comprising the pubic segment of Hart prolonged backward to the sacrum by the muscular tissue of the uterus<sup>1</sup> and the sacro-uterine ligaments (which are rich in muscular tissue), while the lower partition would include the structures of the perineum proper, held in close apposition to the upper partition by the natural tonicity of the levator ani and transversus perinæi muscles, and the elastic and muscular fibres found in the tissue of the sub-peritoneal pelvic space.

With these slight modifications, the essay of Hart seems to have presented the physiological construction of the female pelvic floor more in accordance with my own conception of the parts than that of any other author. The fact that the cervix can be drawn down to the vulva, without any great amount of force being used, does not seem to me to exclude the sacro-uterine ligaments from being considered a part of the upper segment; nor does it prove that they are not important agents in supporting the uterus, since their anatomical construction is such as to admirably adapt them to yield to a sudden strain and easily regain their proper tone. That we really have some such supporting partition, in addition to the muscular structures of the perineum and the perineal body, can easily be demonstrated on the living subject by an experiment which has been suggested by another, but which I have personally verified over and over again. If the perineum be pulled downward with a Sims' speculum, when the woman is in the standing posture,

<sup>1</sup> This view was first, to my knowledge, advanced in print by Foster (Gynecol. Trans., 1881), who expresses himself as follows:

"Except to resist extreme displacements of the organ, the broad ligaments, the round ligaments, the bladder, the rectum, and the perineum take no part among the supports of the uterus. Ordinarily, the latter consists wholly of the anterior wall of the vagina in front and the sacro-uterine ligaments behind, which together constitute what may be termed a beam traversing the pelvis antero-posteriorly, on which the uterus rests, being interposed between them, firmly attached to the one anteriorly and the other posteriorly, making of them, so far as the mechanical effect is concerned, one structure. Thus, and to this extent only, is the vagina—and then only its anterior wall—one of the much-debated supports of the uterus. It is not a prop; still less does it support the uterus by virtue of any rigidity of its own *as a tube*, as has been claimed (the mechanism being likened to that by which a bough sustains its fruit), but its anterior wall acts simply by reason of its connections with other parts."

the uterus does not fall to any appreciable extent, although the weight of the super-incumbent organs of the abdomen is exerting its greatest influence toward a downward displacement; this would not be the case if the structures which support the uterus were confined entirely to the perineum itself, and it seems conclusive proof at least of the valuable aid afforded by some other structures. If these modifications of Hart's views be accepted, the act of expulsion of the fetus, or of some abnormal growth, from within the cavity of the uterus

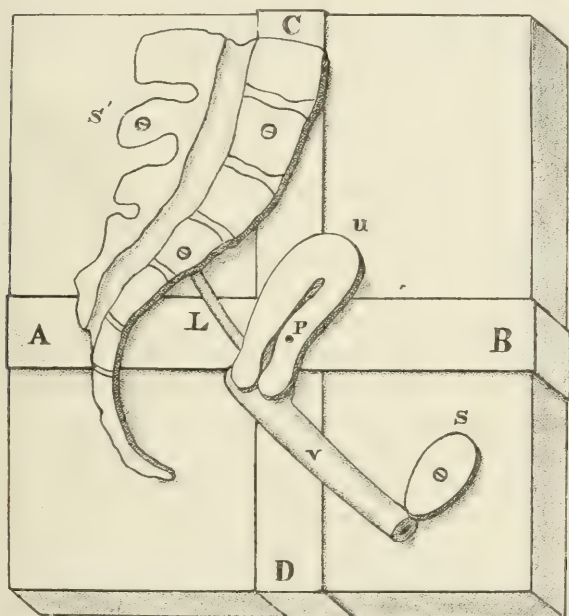


FIG. 6.—A diagram of a model designed to show the upper supports of the uterus and their relations to the mechanical treatment of uterine displacements.

A B, and C D, two elastic bands which intersect at the point of attachment of the uterus (U), which is fastened to them by a pivot (p); S, symphysis pubis, fastened firmly to block; as is also the sacrum (S'); U, uterus, made movable in all directions by elastic bands (A—B and C—D); V, a rubber tube, to represent the vagina; L, a rubber band, to represent the sacro-uterine ligaments.

is associated with the piercing of two septa; rather than the folding back of one flap and the raising of another, both of which are presumed by Hart to be unattached at one extremity. There has been a working model devised by my friend Dr. F. P. Foster, which illustrates in a most complete and simple way the upper support to the uterus and some other points of



interest, among which may be mentioned the action of the Hodge pessary upon retroversion of the uterus. The probable mechanism of this instrument, as far as my researches go, was first explained by Peaslee and Bantock. As the subject has been discussed, however, by many authors, and various explanations given of the true mechanism of this pessary, I deem it of sufficient importance to warrant the description of this model and the insertion of a few scattered hints which are suggested by it.

This drawing represents the bony outline of the sacrum and pubes sawn out of wood and placed immovably upon a board in their proper relations with each other. A piece of wood is also similarly sawn into the proper shape of the uterus and attached to the board by two broad strips of elastic, which cross each other at the point of junction of the uterine cervix and body; these strips being so fastened to the model of the uterus as to allow of its motion in every direction, while they tend also to restore it to its proper place when traction ceases. The elastic bands of the model may be considered as analogous to the elastic and muscular fibres which exist (1) in the cellular tissue of the subperitoneal pelvic space and (2) in the ligaments of the uterus itself. The cervix of the modelled uterus is now inserted into the open mouth of a rubber tube (analogous to the vagina) and the anterior wall of this tube is drawn tense and fastened to the lower border of the symphysis pubis. The anterior end of this rubber tube is cut off at the symphysis to correspond to the mouth of the vagina. Finally, the uterus is connected to the sacrum by an elastic strap which is made continuous with the point of attachment of the rubber tube to the posterior lip of the cervix; this represents the sacro-uterine ligaments and completes the upper segment of the pelvic floor, which is thus made to consist of the anterior vaginal wall, the uterus itself, and the sacro-uterine ligaments. As the wall of the bladder is in part continuous with the anterior wall of the vagina, the model is to all intents and purposes a perfect representation of the conditions which exist in nature. Now, if the posterior vaginal wall be crowded backward in this model by the introduction of anything into the vaginal canal (which lies tightly closed in the model on account of the tension exerted upon its anterior portion) the body of

the uterus will be seen to tilt forward in exact proportion to the amount of pressure created upon the posterior wall of the vagina. This is believed to be the true mechanism of the Hodge pessary, and the opinion of Bantock seems to be confirmed by the researches of Hart who publishes a drawing, as a diagrammatic representation of the action of this support. Some other hints are afforded us by this ingenious model, which cannot be properly discussed here, but which may be simply alluded to, viz., that the uterus can be drawn downward and again resume its normal position, by the aid afforded by the anterior wall of the vagina and the sacro-uterine ligaments; that the elastic and muscular fibres of the pelvic cellular tissue and the uterine ligaments are important agents in enabling the pressure exerted upon the posterior vaginal wall to create anterior deflection of the body of the womb (since they practically form an elastic support to that organ binding it to the lateral wall of the pelvic cavity and thus enable the organ to respond to pressure, as a lever with a fulcrum in its middle point would do); and, finally, that the anterior vaginal wall becomes so closely intermingled with the muscular fibres of the uterus and the sacro-uterine ligaments as to constitute what may be practically regarded as one continuous structure.

The *length* of the vagina is usually greatly overestimated, on account of its excessive distensibility. While marked variations may be noticed in different subjects during life, due chiefly to alterations in the position and weight of the uterus, the average length of the anterior wall may be given as about two and one half inches and that of the posterior wall as a trifle over three inches. The posterior wall is longer on account of its attachment to the posterior portion of the cervix, upon which it is prolonged to a greater extent before its attachment, than in the case of the anterior wall.

The anterior wall of the vagina is loosely attached to the wall of the bladder by connective tissue in its upper half. In its lower half, however, it is intimately associated with the tissues about the urethra; the partition which is thus formed being called the "*septum urethro-vaginale*." The posterior wall of the vagina is separated from the rectum, in its upper fifth, by the peritoneal pouch, the "*cul-de-sac of Douglas*;" while "the perineal body" is interposed between it and the

rectum, for an extent whose limits are not as yet clearly defined, in its lower portion. In the space intervening between the perineal body and the pouch of Douglas, the vagina and rectum seem to possess a degree of mobility (to allow of their ever-varying degrees of distention) which rather tends to refute the statement made by some authors as to an intimate blending of these tissues into the so-called "*septum recto-vaginale*." Braune states that these organs are separated by *two layers* of fascia and loose connective tissue, in this locality. In support of this view, a case related to me by A. H. Smith, M.D., of New York City, possesses special interest. A woman was admitted to one of the hospitals and placed under his care. She presented a hematoma as large as an orange between the rectum and vagina in the *lower third* of the space, immediately above the level of the pelvic floor. This unique case clearly demonstrates that the vagina and rectum do not become so closely united as to form the so-called "vagino-rectal septum," as blood could not have become effused to any appreciable extent in the locality mentioned without the walls of the vagina and rectum were separated by connective tissue or fasciæ. A case somewhat similar to that reported above is recorded in Emmet's recent work on gynecology, in which a pelvic hematoma separated the vagina and rectum as far downward as the level of the pelvic floor. The existence of fasciæ between these organs as far down as the level of the pelvic floor I have been able to personally verify at the dissecting table.<sup>1</sup> After a complete removal of the structures which enter into the formation of the female perineum, the vagina and rectum may be torn apart with the greatest ease and with no apparent injury to the walls of either tube.

As has been stated in previous pages, my own researches tend to discredit the penetration of the perineal body, between the rectum and vagina, above the limits of the pelvic floor.

The *direction* of the vaginal canal, in the upright posture, has been variously represented. Most of the drawings of the later investigators place the axis of the vagina as more nearly vertical than my own observations would tend to confirm. Even Hart's computation, that the axis of the vaginal canal forms an

<sup>1</sup> In one frozen section, the pouch of Douglas descends almost to the ostium vaginæ.



angle of sixty degrees with the plane of the horizon (presumably in the erect posture) seems to me to be excessive. I am inclined to believe that forty degrees with the horizontal plane would more nearly indicate the normal angle made by the vaginal axis in the erect posture,<sup>1</sup> and sixty degrees when the woman is placed upon the back. The introduction of the finger is not a safe guide to determine this point, as pressure may be made unwittingly upon either the anterior or posterior vaginal wall. Several ingenious instruments have been devised, which may be used in determining this point. There is scarcely any doubt, however, that the vaginal canal is more nearly horizontal, when the woman is in standing posture, than is generally supposed; and, if some existing cuts in anatomical and gynecological works are destined to be perpetuated, the error is liable to be eradicated slowly.

(To be continued.)

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#### TREATMENT OF OVARIAN CYSTS HAVING FORMIDABLE ADHESIONS, BY INCISION AND PERMANENT DRAINAGE.

BY

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CASE I.—*Suppurating Ovarian Cyst, with extensive adhesions treated by free incision and drainage. Recovery.*

Mrs. X., twenty-seven years old, naturally of rugged constitution and of healthy parentage, is the mother of two children, respectively five and two years of age. Soon after the birth of the last child, March 12th, 1880, the attending physician discovered a small ovarian tumor on the right side, about the size of a five-months' fetal head. It seemed to be partially adherent. I am told the tumor was aspirated, and six ounces of fluid drawn off; also that this fluid, under the microscope, revealed the ovarian cell. The tumor slowly refilled, and continued to enlarge for a year, without seriously impairing the general health. In April, 1881, suddenly, and without apparent cause, inflammation was

<sup>1</sup> The rectum and bladder being empty, and the tonicity of the perineum being unimpaired.

set up in the cyst, attended with acute febrile action, and very great suffering, for four or five weeks, which terminated in the free discharge of pus and ovarian fluid by the rectum, and a corresponding diminution in the size of the tumor. The stomach soon became very irritable, almost all food taken being vomited, the general health gave way, and she was reduced from one hundred and forty—her full weight—to seventy pounds. About the middle of the following June, the discharge of pus by the rectum gradually ceased, the tumor again increased in size, the appetite returned, and with it a corresponding increase in strength and flesh. In the early part of August of the same year, a phlegmonous swelling made its appearance in the left inguinal region, and soon extended upward toward the navel, near which it burst through the abdominal walls, discharging a great quantity of most intolerably fetid pus. The discharge continued up to the last of September—always copious and fetid, sometimes sanious—when it again ceased, and the opening closed. At this time, her health had so much improved that she was able to visit her friends, and make long journeys. The following month, however, the sinus re-opened and discharged constantly all that winter; the pus was so offensive that one could hardly remain in the room with the patient. In the spring of 1882, her strength again began to fail, the stomach rejected food, emaciation ensued, and dissolution seemed impending. At this juncture, she again unaccountably rallied, regained her appetite, and in a measure began to recuperate, in spite of the copious and persistent suppuration. I first saw her September 24th, at which time her weight was 85 lbs. The fetor which repelled and nauseated others had not seriously impaired her appetite, and her hope of recovery was still strong. Four days later, September 30th, after the canonical cathartic, and ten-grain dose of quinia, at daybreak, on the morning of the operation, with the aid and counsel of the Hospital staff, I made an exploratory incision in the median line, as usual, and about six inches in length. During the progress of the operation, this incision was extended to the umbilicus. The entire peritoneal cavity was of a dark crimson hue, but there was no lymph, pus, or ascitic fluid. The tumor, which was about the size of a fetal head at full term, was found to be firmly adherent to the intestines everywhere, except its upper surface. Not even the slightest space between the tumor and intestines could anywhere be discovered. There was no attachment to the uterus, bladder, or other abdominal viscera. Its enucleation was at once considered; but after separating a portion, in area equal to the surface of the palm of the hand, without discovering any lamination, but with the feeling that I was digging into solid tissues, instead of separating layers, I became alarmed lest I should make matters worse, and desisted. On exploring the sinus which had been discharging near the umbilicus, I found that it extended down through the inguinal region into a cloaca under the pubic arch, which was roughened by the loss of its periosteum. I broke

into this cloaca from the pelvic cavity, and passed a perforated rubber drainage-tube from the vagina through Douglas' cul-de-sac up into the abdominal cavity, and out through the lower angle of the abdominal incision. The tumor full of pus was tapped and the orifice was attached by sutures to the abdominal incision, through which a Thomas glass drainage-tube was introduced into the tumor, and the abdomen closed in the usual manner. During the progress of the operation, the abdominal viscera were protected by the frequent application of soft, warm cloths, wrung out in hot, carbolized water. The natural heat of the body was maintained by keeping the temperature of the room at 80° F., and during the latter part of the operation, by also applying bottles of hot water to the patient's extremities. The patient was under ether sixty-five minutes, without any perceptible shock, or even quickening of the pulse. While recovering from the effects of the ether, there was but one attack of vomiting, and that very slight.

The spray used was listerine, one to ten, but the instruments, sponges, etc., were kept constantly immersed in a hot two-percent solution of carbolic acid.

The pulse at any time never exceeded a hundred, and the highest temperature reached was 101.5, on the third day. The first night after the operation, the patient got no sleep, but on the second and third nights a suppository of a quarter of a grain of morphia was given, and a refreshing night's sleep obtained. From that time forward the patient slept naturally, without opiates. The day following the operation, a small quantity of milk was taken and readily assimilated. Nothing but milk and beef-tea was given till the eighth day, when a little scraped beef and cracker was allowed and well borne.

The abdominal sutures, which were of silk, were removed on the sixth day, primary union being perfect, and on the following day the bowels moved naturally. The day after the operation, and three times a day subsequently, the rubber and the glass drainage tubes were both thoroughly washed out with listerine, of one to ten strength, and each time after the cleansing process, the cavity of the tumor was left full of the antiseptic. In twenty-four hours after the operation, the intolerable fetor of the pus entirely vanished, and never returned. Day by day, the quantity of the discharge diminished, till on the twenty-ninth day after the operation, that from the rubber drainage tube in Douglas' cul-de-sac ceased, so that, two days later, this drainage tube was withdrawn, and its track at once filled in, without further discharge. At this time, the cavity of the tumor had so far contracted as to hold less than an ounce of liquid, and its pyogenic membrane seemed to be utterly destroyed, the cavity apparently filling up by the process of granulation. November 26th, this cavity holds only thirty minims of the antiseptic. The patient eats and sleeps well, and is apparently in perfect health, weighing now 115 pounds—a gain of more than half a pound a day from the date of the operation.



CASE II.—*Cyst of the broad ligament; incision and permanent drainage; recovery.*

Mrs. D., aged thirty-two, married sixteen years, of strong constitution and good family record, came under my care in August of the present year. Had borne one living child and had had three miscarriages. She stated that a few weeks after marriage, she was seized with severe pain in the region of the left ovary, from which she suffered so constantly and intensely that she was confined to her bed for the greater part of a year.

She declares she has scarcely been free from pain for sixteen years, and as a consequence she has become addicted to the use of opium. For the last three years this suffering has become intensified and the opium habit has correspondingly increased.

Mrs. D. first became aware of the tumor about a year ago. At the time of operation, it had attained the size of a fetal head at full term. During the year she lost twenty pounds of flesh, and suffered from diarrhea, sleeplessness, and loss of appetite.

A digito-vaginal examination showed mobility of the uterus somewhat impaired, and a fluctuating tumor, tense enough to be solid, on left side, between uterus and bladder; the uterine canal was three and one-quarter inches in length. A sound introduced into the uterus moved the tumor when the uterus was rotated toward her left, but it did not move when the uterus was rotated towards her right side. Abdominal palpation and digito-vaginal examination alike caused much distress. Urine tested and found normal.

Ten days prior to operation the bowels were repeatedly acted upon and liquid diet enjoined. Five hours previous to operation administered ten grains of quinia, and soon after one-quarter grain of morphia.

The operation was performed September 11th. The operating room was prepared as in the former case.

Listerine was used for spray and also for sponges and instruments. An incision five inches long was made through the linea alba, dividing a layer of fat three-quarters of an inch thick; the tissues were carefully divided on a director, till the sac was exposed, which proved to be a cyst of the broad ligament.

The sac was tapped with a trocar, and about two quarts of clear watery liquid were drawn off. The cyst was so intimately blended with all the adjacent structures that its removal was not to be thought of; accordingly the cyst was attached by suture to the lower angle of the abdominal incision and a drainage tube inserted. The patient was under ether one hour, one-half of which time was spent in manipulation and consultation, to differentiate the nature of the tumor. Great care, however, was taken to avoid chilling the intestines, which were kept covered with soft cloths wrung out in a hot antiseptic solution of listerine, and the natural heat of the body was maintained, not only by the temperature of the room, but by the constant application of hot bottles to the sides and extremities. The patient rallied from the operation without any

apparent shock or even a quickening of the pulse. The vomiting and retching occasioned by ether was distressing, yet the day following, the pulse was seventy-six and the temperature normal. On the 13th, the pulse was 96, the temperature 100 $\frac{3}{4}$ . The stomach was so irritable that it tolerated only tea, and there was so much pain that it became necessary to administer one-half grain of morphia hypodermically. A serous fluid accumulated in the drainage tube, causing it to run over; this was drawn out with a syringe, and the cyst refilled with a weak solution of listerine. September 14th, pulse 92, temperature 100.5; patient weak and irritable; complained of flatulence, which was relieved by the introduction of a rectal tube. Sept. 15th, pulse and temperature the same; nausea and vomiting. Gave subnitrate of bismuth, and continued the opiate for pain. Sept. 16th, pulse 106, temperature 100; milk and lime-water taken sparingly; stomach still irritable and patient in a good deal of pain; slept poorly. September 17th, better sleep and less pain; pulse 100, temperature 100 $\frac{3}{4}$ . Removed sutures; primary union secured.

Opiates still required, and only able to eat sparingly.

7 P.M., gangrenous odor emanating from the wound; the portion of the cyst sutured into the abdominal incision seemed to have taken on a fungous growth, becoming thick and solid. At the same time a gangrenous spot the size of a quarter of a dollar appeared in the abdominal incision just above the attachment of the cyst. Sept. 18th, pulse 112, temperature 100; bowels moved for first time. Patient somewhat delirious, complaining of faintness and weakness. Ordered two grains of quinia every two hours, and all the brandy the stomach would retain.

At 3 P.M., pulse 120, temperature 101°; 5 P.M., the pulse ran up to 130, involuntary dejections occurred, and the patient became very delirious. At 9 o'clock the pulse was 140, tremulous, and very weak. Patient more delirious, and at times wholly unconscious. The involuntary evacuations continued, and she appeared to be sinking. I covered the gangrenous surface with iodoform, gave brandy freely, hypodermically, with one-half grain morphia, expecting to make a post-mortem the next day.

Instead of this, I found the patient without delirium, very comfortable, of normal temperature, and the pulse 112, which in the latter part of the day went down to 88.

During the night, the wound had thrown off its slough, and now exhibited a clean, granulating surface.

September 20th, pulse 96, temperature 99°. Patient feels well, and begins to take nourishment satisfactorily. From this time on, her recovery was uninterrupted, and unmarked by any event of interest. From the first, the cyst cavity had been washed out with a weak solution of listerine two or three times a day, each day its capacity diminishing.

Toward the last, it was reduced to a mere tube, lined with exuberant granulations, and finally became solid, so that it could be felt as a firm cord in the abdominal cavity.

Twenty-one days after operation, the patient went home, but the discharge did not entirely cease till a week later.

Are these recoveries exceptional, or do they exhibit a method of management that renders the most formidable class of ovarian tumors amenable to treatment?

In Spencer Wells' one thousand ovariectomies, there were fifty-seven cases in which merely an exploratory incision was made and the operation abandoned; twenty-eight cases in which the operation was begun, but left unfinished. It is a fact worth noting that there were two cases of permanent and complete recovery after mere exploratory incision and in the absence of drainage, as far as the report shows. Of the twenty-eight cases of operations begun but left unfinished, he reports three cases in which none of the cyst was removed, but a permanent opening kept up, and after suppurative inflammation a cure was obtained. It is a great misfortune that we are not furnished with a detailed report of these eighty-five cases that we might learn the nature of the obstacles and the complications which justified him in abandoning them, not only difficulties too formidable to be undertaken, but such that, having been encountered, were succumbed to. From the study of his reports, and the general tenor of his teachings, we are warranted in inferring that *adhesions* constitute the chief obstacle to the successful management of the most dangerous class of ovarian tumors. Referring to the subject of adhesions, he says: "Attachments to the bladder or rectum may be almost inseparable without great and immediate danger to life. The same may be said of attachments to the liver, stomach, spleen, or brim of the pelvis, . . . and to the deaths after ovariectomy really attributable to adhesions must be added all the instances of failure of relief by exploratory incisions and incomplete operations, as well as those which are dismissed as affording no chance of success because of the hindrance of this complication."

In looking over the tables of his one thousand completed operations, the three fatal cases out of five in which there were adhesions to the uterus make us wonder that he should omit to enumerate the uterus among the viscera, extensive adhesions to which gravely complicated the result. But he has practically inculcated this in completing but eight operations in which



uterine adhesions existed. In only one instance did he attempt to complete the operation where there were adhesions to the bladder or liver, and in both cases with a fatal result.

That he should have attempted the operation in cases of adhesions to the bladder or liver but once, and in cases of uterine adhesions but eight times in one thousand ovariectomies, proves that such complications constituted the grounds for abandonment in a large proportion of the fifty-seven cases. It is reasonable to suppose that many of these abandoned cases might have been saved by resorting to drainage as in the cases above reported. It is well known that the largest amount of fatality in ovariectomies is due to the attempt to separate adhesions. Of Spencer Wells' second five hundred cases, the mortality in extensive adhesions to the abdominal viscera was 37.25 per cent, and in two hundred and twenty-two cases reported by Billroth, where the adhesions to the abdominal viscera were extensive, the mortality was 56.9 per cent.

Spencer Wells discards the drainage tube and avows it. In his one hundred and sixty-five cases, from January, 1878, to December, 1881, he entirely abandoned the drainage tube; yet four of his last sixteen deaths were caused by septicemia, and in the one thousand cases there were seventy-two deaths from septicemia. If, as it would appear, he abandons all cases in which there are extensive adhesions, it is true he has little need of drainage; no one advocates drainage except where septicemia is menaced. In one case, Mr. Spencer Wells did the right thing accidentally. It was in 1865. "After tapping the principal cyst, and emptying it of several pints of fluid containing much blood, attachments to the brim of the pelvis and to the uterus made me resolve," to use his own language, "not to attempt the separation, but to *replace the empty cyst.*"

"There was," he continues, "such free hemorrhage from the opening into the cyst made by the trocar, and from the little punctures made by the hooks which seized the cyst, it was obviously unsafe to return it."

The cyst was accordingly attached to the abdominal incision, and its contents allowed to ooze out as it filled. Even this primitive method of drainage permitted the patient to recover.

In 1877, twelve years later, Wells himself successfully treated a suppurating cyst by incision and permanent drainage; but neither this nor his accidental cure above referred to convinced him of the soundness of such treatment, for in discussing the subject of drainage, he says: "Peaslee has advocated and adopted with success this system of drainage, with the addition of repeated washings-out of the peritoneum with warm water and disinfecting solutions. In a few bad cases, I have also followed this practice, but never with success." Again, in his chapter on "Recent Modifications of the Operation," he sums up his conclusions as follows: "The chief modifications in my practice have been the use of carbolic spray during the operation, the soaking of sponges, silk, and instruments in a solution of the acid, tying the pedicle, and leaving it in the cavity, and *the disuse of the drainage tube*, even in unpromising cases."

Somewhat in contradiction of the above, he says, in the chapter on "Incision and Drainage:" "I think, therefore, it should only be considered admissible in cases where ovariectomy cannot be completed. Then, after incision and emptying the cyst as far as possible, and securing the opening in the cyst to the opening in the abdominal wall, the cavity is kept empty by draining and the injection of disinfecting agents."

The following reports are authentic, and prove that cures of cases with inseparable adhesions by the method of incision and permanent drainage are by no means unprecedented, though recourse to this method is not systematically practised. Erich abandoned an operation on account of formidable adhesions. Septicemia developed on the third day; a catheter was pushed in between two sutures, and the abdominal cavity washed out with an antiseptic solution. The patient recovered. Dr. J. E. Janvrin, of New York, reports a successful case of polycyst of right ovary, adherent to the whole right side of the uterus, the walls of the sac being sewed into the abdominal incision around a drainage tube. Dr. Drysdale records a case of dermoid tumor universally adherent, and communicating with the bowel. This case, treated by incision and permanent drainage, recovered. Dr. Schreiber, of London, has recently reported the cure of a double dermoid suppurating cyst by incision and drainage without opening the abdominal cavity.

Hubert, in 1881, reported the successful management of an ovarian tumor with indestructible adhesions by suturing the cyst to the abdominal incision. Thomas, in the July number of THE AMERICAN JOURNAL OF OBSTETRICS, also reports the cure of an adherent ovarian tumor by incision and permanent drainage.

The alternative of incision and permanent drainage is either abandonment of the case, an incomplete operation, or enucleation. Surely, in the face of such possible results, no case of simple ovarian tumor should be abandoned.

An operative procedure, which provides for any portion of a pyogenic membrane being left in the peritoneal cavity without drainage, needs only to be referred to to be condemned. I incline to the belief that the *operation of incision and permanent drainage should supersede all incomplete operations, and should generally be resorted to in all cases of extensive adhesions* to the large intestine, bladder, uterus, liver, stomach, spleen, or brim of the pelvis. The formidable nature of the operation of enucleation is indicated by the rarity of its performance. I find no reference to the operation by Spencer Wells in his one thousand ovariectomies, and Schroeder resorted to enucleation but once in two hundred and seventy-six operations.

Enucleation in suitable cases is no doubt a feasible operation, but always a very hazardous one. Hegar, in his "Operative Gynecology," says: "Intra-ligamentous tumors must generally be cut off at a level with the abdominal wall, and the adherent pelvic portion is then sutured to the abdominal incision, and drainage employed; enucleation is too difficult and dangerous."



## A CLINICAL CONTRIBUTION TO GYNECOLOGY.

BY

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IN presenting this contribution to the profession, I offer no excuse. Both cases seem to me, at least, of great importance, the first case as to diagnosis and the second as to the possible etiology of some forms of insanity.

CASE I.—*Cyst of Broad Ligament with Peculiar Fluctuations in Size; Operation; Death.*—About April 3d, 1882, I was asked to see, through the kindness of Dr. Chas. M. Zeh, Sister I. (Sister of Charity), with the report that the patient had a rapidly growing abdominal tumor.

I found the patient in bed, feebly looking, slightly anemic, of small stature, about thirty-two years of age, and of pleasant disposition. She had been confined to her bed about two weeks, complaining of severe "stretching" pain in the right inguinal region. She had become so very large within a fortnight, that she was unable to attend to her duty as a school teacher. About a year ago she had some soreness in the right inguinal region and at times noticed a distinct swelling, which would again disappear. Her physician distinctly remarked the tumor at one time, but the next time he saw her it had entirely vanished. The disappearance of the tumor was not noticed to take place with the occurrence of any function.

At times she would suffer greatly from nausea, vomiting, and acid dyspepsia, still she was well able to fulfil her peculiar duties, until about two weeks before I saw her.

She was a native of Ireland, first menstruated at the age of thirteen years, was very regular, nearly painless, lasting three days, and had no leucorrhœa. Physical examination, in the dorsal position, revealed a large distinctly fluctuating, apparently monocystic tumor, equally filling the abdomen anteriorly. There was tympanitic resonance in both flanks, and above the middle, between umbilicus and ensiform cartilage. The patient now being placed on her side, no marked difference was noticed in the area of dulness.

No further examination was made at this time, but the patient was requested to enter my service at the Woman's Hospital, of Newark, N. J., for further observation.

There the circumference of the abdomen was measured and found to be thirty-two inches over the umbilicus. The distance from xyphoid cartilage to symphysis pubis fifteen inches.

The cervix uteri was high up in the pelvis, a little towards the

left and just behind the os pubis. There was no fluctuation in the cul-de-sacs.

The body of the uterus could not be detected and a sound was not used as the patient's right side was still very tender.

Examination per rectum revealed nothing of importance. Urine was normal.

A small quantity of fluid was removed from the tumor and given to Dr. F. M. Prudden (to whom I am much indebted and here wish to express my special thanks) for examination.

He found nothing but red blood-corpuscles. This was rather confounding, as the diagnosis of a rapidly growing monocystic ovarian tumor was made. In the mean time the patient menstruated. This lasted three days and the quantity was small.

On the last day of her menstruation the tumor became *softer* and within six days after the period it *could hardly be felt*.

The patient was free from pain and could go about. As I was perfectly at loss about a diagnosis, no operation was thought of at this time.

An increase in the size of the tumor took place again by the next menstrual epoch, so that it increased over its former size. After this second menstrual epoch the tumor again decreased, but not to the same extent as before.

The following are actual measurements taken at different periods:

July 2d, menstruation expected, circumference of abdomen over umbilicus 37", from os pubis to ensiform cartilage 17".

July 5th, menstruation ceased, circumference of abdomen over umbilicus 34", from os pubis to ensiform cartilage 15".

July 25th, menstruation appeared, circumference of abdomen over umbilicus 39", from os pubis to ensiform cartilage 18".

July 27th, menstruation ceased, circumference of abdomen over umbilicus 37½", from os pubis to ensiform cartilage 17".

Sept. 1st, menstruation expected, circumference of abdomen over umbilicus 41", from os pubis to ensiform cartilage 19".

Oct. 5th, the patient measured forty-two inches around the abdomen and twenty inches from xyphoid cartilage to os pubis. I now removed sixteen pints of a dark yellowish-red fluid by tapping with the aspirator.

After tapping she measured thirty-eight inches around the abdomen and seventeen inches from os pubis to xyphoid cartilage. Dr. Prudden kindly reported the following as the result of his examination of this fluid:

"Fluid dark-red, neutral reaction, odor of carbolic acid, specific gravity 1022, completely solidifies on boiling and with nitric acid. It contains 11.93 per cent of albumin by weight, no paralbumin and no mucus and no paraglobulin.

"The microscopical examination shows numerous red blood-cells, comparatively few leucocytes, a small amount of granular fibrin, and a few rod bacteria, and nothing else."

This agreed fully with my own examination. The tumor now rapidly began to refill. On October 20th, it measured just as

much as *before* the tapping, and on October 27th, the patient measured fully forty-four inches around the abdomen.

The patient was candidly told of her chances by an operation and of the possibility of an exploratory incision only.

She took her chances and on October 29th, after one week's careful preparatory treatment, the operation was done with assistance of Drs. Balleray, Hollister, Bennet, and Dr. J. C. Young administering ether.

The incision was made as in ordinary ovariectomy. After all bleeding had stopped, the peritoneum was opened. The tumor presented a purplish striated appearance, which might be taken for muscular fibres. The hand was introduced and a few adhesions found with the anterior parietes. The growth was now carefully examined as to its origin. It was evident that it was connected with the uterus and right ligamentum latum, and there seemed no doubt of its being a cyst of the posterior wall of the uterus. It was deemed safe to remove the tumor. The fluid was evacuated and several adhesions to intestines, vermiform appendix and omentum, ligated and cut; a number of smaller cysts were broken with the hand, and the tumor was then lifted out of the abdomen.

The pedicle, which consisted of the uterus and both ligamenta lata, was surrounded by a strong elastic tube, so that all hemorrhage was controlled. The tumor with both ovaries attached was cut away. The tumor with its contents weighed twenty-five pounds. The pedicle was now treated after the method of Hegar and Kaltenbach (p. 437, *Operative Gynækologie*, 1881), the peritoneal cavity cleansed, drainage established, and the abdominal wound closed. The operation lasted sixty-five minutes. The patient rallied rapidly from shock and did well until 6 P.M., when her temperature rose to  $102\frac{3}{4}$ , pulse 140, and respiration 39. About midnight the patient complained of severe pain in the abdomen, she became tympanitic, and had some inclination to vomit. The drainage tube was washed out with one-per-cent sol. carbolic acid until clear fluid returned.

At noon, twenty-four hours after the operation, the patient died.

An examination was made two hours post-mortem. The intestines had already lost their usual gloss, a slight quantity of bloody fluid was found in the posterior cul-de-sac and the double elastic ligature surrounded the uterus just above the os internum. The patient died of very acute peritonitis. The tumor was sent to Dr. Prudden who kindly furnished the following report:

"The specimen you have sent me is a cyst of the broad ligament. The fragment of uterus contained two small myomas. The tube was dilated in its intra-mural portion and nearly occluded further out by new-growth of connective tissue around the mucosa. The uterine mucous membrane in the small portion which I had was thickened. Both ovaries alike showed the lesions of chronic oöphoritis. The cyst-wall was in general composed of fibrillar connective tissue, in some places dense, in other loose in texture. In many places the thin-walled veins were greatly dilated, contained old thrombi and the connective tissue in their vicinity



infiltrated with blood or contained much blood-pigment both free and in connective-tissue cells. The cyst-wall had in most places no distinct cellular lining, in some parts was lined with a single layer of flattened cells; in still others was covered with a dense layer of fibrin. The abundance of very thin-walled blood-vessels in many parts and evidences of persistent extravasation would account for the character of the cyst-fluid, but I discover nothing morphologically to account for the curious fluctuation in the contents."

I have described this case at length because it presents so many points of special interest. I am not aware that any similar case has been described anywhere in the text-books or journals. The impossibility of making a correct diagnosis was therefore excusable. The fluctuation in the contents of the tumor is not fully understood. The probable explanation would be, that as the menses appeared the general congestion of the pelvic organs, which accompanies that function, produced an increased exudation into the cyst and even ruptured some of the thin-walled veins. The rupture of some of these veins explains also the result of the examination of the contents. As a rule, cysts of the broad ligament are unilocular, this was multilocular and encroached strongly upon the uterus. Tapping usually cures cysts of the broad ligament, this tumor rapidly refilled.

I have given the history of this case at length, even at the risk of becoming tedious, and hope it may be of some use to others in similar cases in forming a diagnosis and prognosis, and may assist in the course of treatment to be pursued.

CASE II.—*Puerperal Mania; Laceration of Cervix; Operation; Cure.*—On the evening of June 1st, 1882, I was called to see Mrs. E. W., primipara, who had been in labor for twenty-four hours under the care of a midwife. I found the patient sitting in bed extremely restless on the approach of pain, which she described as excessively severe. The membranes had ruptured eight hours before the beginning of the pains. The child could distinctly be felt in the uterus through the abdominal walls and was in the occip. anterior left position.

The head had entered the pelvis by its greatest circumference, the os was dilated almost an inch and unyielding. I ordered a number of hot vaginal injections and several doses of Dover's powder. After eighteen hours the os was dilated sufficiently for interference. The child's heart began to fail and the short forceps were resorted to. Delivery was accomplished with some difficulty. Chloroform had to be administered on account of the restless condition of the mother.

The child was born alive.

On the third day the patient's pulse rose to 110 per minute and temperature to 101 degrees.

There had been no chill and no bad odor to the lochia, still antiseptic injections were ordered.

The next day the patient was in about the same condition, only very quiet and objected to nurse the child.

On the fifth day she absolutely refused to nurse the baby, thought she could never be the same woman as before, had no taste for her food, and her body felt "numb and dead." She had a staring, indifferent look, no interest for her child, her mother, or her husband.

It was evident that the patient was insane. She was now becoming sleepless, and day after day her symptoms increased until complete melancholia and anesthesia supervened.

She would now nurse her baby occasionally and very soon would nurse as often as it was put to her breast, but never took it up herself for that or any other purpose.

To explain her "numb and dead feeling" I have noticed among other symptoms these: She was unable to say whether the injections given per vaginam were hot or cold. No matter what kind of food, whether hot or cold, salted or not, was given her, she would swallow it so long as anybody fed her. A needle was run through the skin of her hands and feet apparently without her knowledge. In the fifth week I asked her to take a walk with her husband, whom at times she really hated. She never complained of getting tired, and thought she could walk day and night, for it was all the same whether she walked or lay down. She would not look after the proper appearance of her dress and person, about which she had always been very careful. Sometimes she wept bitterly about her condition and then would say, "I shall never be the woman I was before." Suicidal ideas were entertained at times. During the first three weeks her pulse never ranged below 100, but her temperature rarely went above 100 degrees.

Seven weeks after delivery, I made an examination of the uterus and appendages, and found a slight laceration of the cervix, which looked irritable and sore. I questioned her husband about sexual intercourse. He did not deny having had intercourse, but it gave her *no pleasurable sensation*.

I told the family that this laceration was possibly the cause of her sickness, and there was certainly no harm in having it stitched up. They readily consented to the experiment. The operation was delayed until cooler weather should set in, so that the baby could be weaned with less danger.

Her condition remained the same up to the day of operation, October 9th. Her baby was weaned about ten days before. She was taken to the hospital for operation, and after the operation complained bitterly of not having felt any pain therefrom, as no anesthetic was used.

Eight stitches were inserted.

When I saw her on the sixth day, she noticed that the water

used for the vaginal injections that morning was warm, and seemed pleased by this symptom of returning sensibility.

The stitches were removed on the eighth day and complete union found to have taken place. Within two weeks she rapidly improved, requested to see her child and husband, helped herself to her food, which she had not done before.

The anesthesia rapidly disappeared and the patient became homesick.

Four weeks after the operation she was dismissed from the hospital.

I requested her husband to inform me of her desire for sexual intercourse. For about two weeks I saw the patient occasionally with still some slight melancholic symptoms. One day she came to my office most delighted: Since last night she had "completely changed," she was the "same woman as before." There had been a return of *pleasurable sensation at intercourse*.

The patient remains perfectly well to this day, loves her child and husband, is able to do all her housework, etc.

There might be some doubt as to the real cause of insanity in this case. There is a possible chance of her getting well from the change of surroundings and from weaning her baby; still when I consider that the usual course of the disease is a little less than nine months (H. Schülle, vol. 16, Ziemssen's Handbuch), furthermore the rapidity with which this patient improved after the operation, and lastly, the complete restoration to health after the *return of sexual appetite* (see a paper read by the author before the New Jersey Medical Society and published in their transactions, 1882), I cannot but consider this to be a reflex psychosis, such as Schroeder van der Kolk and Flemming have observed in cases of version of the uterus, where the use of a pessary cured the patients, and the removal of the same returned them to their former ailment.



## THREE CASES OF BATTEY'S OPERATION.

BY

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"BATTEY'S" operation is the name I still use, because gynecologists have not at present agreed on any other name; oöphorectomy, spaying, female castration, etc., have been proposed and have each their advocates and opponents. For my part, I never could see the use of hunting through dead languages for some jaw-breaking name which would only partially express either the pathology or the operation; it is more natural to use short names. Consider for a moment how many brain cells are destroyed uselessly when we speak or write about hysterotrachelorrhaphy, while if we simply say "Emmet's operation," we save so much brain power for some other use, and still every one knows just as well what is meant. But, above all other considerations, I hold that we should immortalize men by giving their names to instruments, operations, etc., which they have invented or devised, and which have been of great benefit to the human race.

Therefore I will always call it "Battey's operation," or "Emmet's operation," those two operations which show the advance made by gynecology during the last decade, more than any other discovery in this branch of medicine.

The following are three cases operated on by me, and the results:

CASE I.—*Hystero-Epilepsy—Recovery and Cure.*—Miss Christina E., aged twenty-four, has a good family history, with no predisposition to hereditary disease. She commenced to menstruate when eighteen years old, and up to that time was always well; menstruation was at first not regular, but in the course of a year it appeared every four weeks; at this time also—that is, five years ago—she was first troubled with more or less pain at the menstrual period; this increased gradually in severity for three years, and then she was taken with spells of loss of consciousness. The attacks at first were light, but soon became severe, so-called hystero-epileptic, but only came on at the menstrual period. At this time she came under my observation. The dysmenorrhea was of a spasmodic character: she also had leucorrhea

and other evidences of uterine disease. On physical examination, I found retroversion of the uterus, slight endometritis, internal stenosis of the uterus, and severe pain in the region of the left ovary. I told her that the disease might be due to the uterine trouble alone or due to the ovarian disease; that we would cure the former first and then see the result. For about twelve months I subjected her to the ordinary treatment: dilated the stricture with Nott's dilator, applied Lugol's solution, etc., to the mucous membrane—in short, cured the uterine disease, except the retroversion, which was only slightly improved. Internally I gave her at different periods, for weeks at a time, potassium bromide, valerian, zinc, arsenic, strychnine, etc. But in spite of all this, the hystero-epileptic attacks increased in frequency, first every week, then every day or two; always worse, however, at the menstrual period. I could only offer one hope—that was Battey's operation. She went home to Marine City to consult her parents, and returned perfectly willing to submit to any operation; she said she would rather be dead than a burden to her family, as at present. I sent her to St. Mary's Hospital, and operated September 30th, 1888, assisted by Professors Webber and Walker and Drs. McCormick (of Owosso), Flinterman, Hoke, and others, and in the presence of the gynecological section of the students attending the Detroit Medical College. The operation was performed with all antiseptic precautions, including the spray. Ether was used as an anesthetic. Commencing above the pubes, an incision three inches long was made in the linea alba, the different layers cut as usual, the peritoneum reached and also incised. The left ovary was found to be firmly adherent, and had to be loosened; the pedicle was then tied with catgut, cut off and dropped back; the Fallopian tube was not adherent, but was also tied with catgut, cut off, and the pedicle dropped into the abdominal cavity. The right ovary and Fallopian tube were treated in the same way, the abdominal cavity thoroughly cleaned, three deep silver sutures and four superficial silk sutures were introduced, and the incision in the abdomen thus closed. The reaction was good; she was put on two grains of quinine every two hours and opium enough to ease pain, but of the latter very little was required; the temperature and pulse remained almost normal, the former going up to  $101^{\circ}$  only once, on the fifth day, the latter gradually declining from 100 at time of operation to 80 on the eighth day.

The rise of temperature on the fifth I could not explain, again ordered quinine which had been discontinued on the second. On the sixth, when removing the dressing to examine the wound, found a small abscess formed in the abdominal walls; by pressure about one ounce of pus came out alongside of the middle silver suture. This explained the elevation of temperature; for a few days at each dressing about a teaspoonful of pus was pressed out and then it ceased entirely. The sutures were all removed by the eighth day, the wound had healed by first intention except where the abscess was, there a little gaping existed which was drawn

together by adhesive plaster, and healed in a few days. The bowels were also moved on the eighth day by injection and the patient seemed doing well, when she was suddenly taken with a severe attack of acute bronchitis; this was soon, however, partially subdued, and the patient left the hospital apparently well, except for the cough which we treated in the dispensary for more than six months when that also disappeared. The severe cough (and the abscess) I think caused a small hernia to appear at the abdominal incision. For this I had a supporter made, which she now wears when she has to work hard, that is on wash-days, as the rupture does not trouble her except when she lifts a heavy weight.

The hystero-epilepsy has entirely disappeared, although she had for three months immediately succeeding the operation, when it was time for her menses to appear, slight symptoms of a recurrence; this I attributed to the habit established in the nervous system. She has never menstruated since and has no leucorrhea. At my request she called to-day (Sept. 5th, 1882) and reported herself perfectly well; she has a good situation, can support herself, and was again profuse in her thanks to me.

CASE II.—*Hystero-Epilepsy; Death.*—Charlotte C., aged thirty-three, single, good family history; she was well until her sixteenth year when she began to menstruate and also to have "fits" whenever she had her menses. In the course of time she also had these convulsions during the interval, sometimes every week, at other times only every two or three weeks, but always most severe and frequent during menstruation, which was scant and sometimes would skip a month or two. I first saw her about twelve or fourteen years ago as a dispensary patient, and got her history as given. Her general appearance at that time was good. There was a weak condition of mind; menses scant and painful; hystero-epileptic attack at irregular times. I saw her in a number of the convulsions and then made the diagnosis of hystero-epilepsy—the term "fits" as given by herself and sister being altogether too vague. Physical examination showed an undeveloped uterus (less than two inches), but no disease of the mucous membrane, great tenderness over region of ovaries, the left worse, and in the region of the tenth lumbar vertebra, pressure on either of these spots would bring on the "fits." Here I may say that the experiments of Charcot were not known at that time, and since I became conversant with them, I never dared to try the experiment with her of continued pressure over the ovaries, etc. At that time I was the assistant of Dr. E. W. Jenks, and under his directions made use of dilators, etc., in order to develop the uterus; in this we succeeded, the uterus increased in size so as to measure two and a half inches, her menses became more profuse and regular, but otherwise she remained about the same. Internally she was given potassium bromide and valerianates for over a year with slight benefit to the convulsions, which were less frequent, but otherwise unchanged. She would pass from my view for a year or two, when she would come for a renewal of the medicine and remain away again for a long time.



In the spring of 1880, she appeared with the statement that her fits were severe and frequent. I found no change in her general condition and simply ordered large doses of potassium bromide, which was changed to iron and muriatic acid occasionally, but gave no relief, the convulsions occurring every day or two and sometimes several in one day. As a last resort, I suggested Battey's operation to her sister and mother; they were willing to try anything. I sent her to St. Mary's Hospital and operated October 20th, 1880, kindly assisted by Profs. McGraw and Webber, Drs. Kieffer, Andrews, and others. The operation was performed as in the preceding case. Ovaries were found adherent, but otherwise apparently normal. The operation was easily performed and the patient rallied well. She was put on two grains of quinine every two hours; opium enough to ease pain, and considerable was required, as she complained a good deal. She seemed to get along very well, without elevation of temperature for thirty hours, when I was sent for in haste by the sisters. Arriving at the hospital in a few minutes, I found the patient dead. She wanted a drink and the sister had lifted her head and was giving her a little weak tea, when suddenly her head dropped and she gasped a few times and was gone.

Post-mortem examination showed that the silver sutures had all broken and the intestines projected from the abdominal wound between the superficial silk-sutures. The silver-wire seemed to be cut as with scissors, and I made up my mind that the patient died from shock; since no other cause could be found.

To say that I was vexed would but faintly express my annoyance at losing a patient on account of the poor quality of silver wire which I could not detect before the operation. I considered her a better case for operation than the first one, and have no doubt she would have recovered if it had not been for that unforeseen accident.

CASE III.—*Ovaralgia and Hystero-Epilepsy; Recovery.*—September 4th, 1882, I received a telegram to come to Muir, a little town a hundred and twenty miles from here, and be prepared to perform Battey's operation. I went there early next morning and was taken by Dr. De Vore to Mrs. P., aged twenty-four years. This patient has a good family-history, had never been sick nor received any injury; has no children nor did she ever have a miscarriage. Her present trouble began about four years ago without any apparent cause. She then had paroxysms of severe pain in the region of the left ovary lasting for some hours; these attacks came on every three to four days for some weeks, then they would disappear for months and again reappear. But even when she was free from the severe attacks she would always have soreness in the region of the left ovary. In the course of time also severe burning pain on the top of the head made its appearance, but her stomach, bowels, and other organs remained in a fair condition.

Menstruation was normal and regular, but these seizures were always worse when she menstruated. She had no leucorrhœa or any other symptoms of uterine disease. About six weeks ago, she commenced to have some attacks as above described and added to them severe hystero-epileptic attacks which would last from five to twelve hours, come on every day or several times a day, and then skip one to three days. A slight aura lasting a few seconds would warn her of an attack, but it was of so short duration that she could not lie down before the attack came on; she has fallen from a chair frequently. The aura consisted of a feeling of numbness in her hands and an appearance of blackness before her eyes. There was complete loss of consciousness and the most frightful convulsions. Otherwise she seemed in a fair condition, her appetite was good, bowels regular, slept well. She had an attack the day before I saw her, which lasted for twelve hours. I must not forget to mention that her mind was perfectly clear and that she answered questions clearly. Physical examination revealed all the organs in good condition, except the uterus which was retroflexed, but otherwise healthy, and the left ovary which was most exquisitely tender, but did not seem enlarged.

The patient had been treated by very good physicians, but without benefit. Dr. De Vore had subjected her to a thorough course of nerve tonic and sedatives (such as potass. brom., strychnine, zinc, arsenic, iron, etc., without the slightest benefit, and he had suggested Battey's operation as a last resort. I came to the conclusion that the cause of all her troubles was degeneration of the left ovary, and that, as thorough medication had failed entirely, an operation might give relief, explaining at the same time to the patient and relatives its results and dangers. The patient was anxious for some radical remedy, she would rather die than suffer and be a burden to her family as she had been. The other physicians in the town "washed their hands of the whole thing," they would not touch the case nor help us, so that we had to depend on a methodist minister to administer the ether, which he did as well as any physician could have done during the whole operation. The operation was done with all antiseptic precautions, except the spray.

The usual incision was made in the median line. The left ovary was found firmly adherent to the rectum and was enucleated from its surrounding adhesions, tied with catgut and removed. The Fallopian tube was adherent to the omentum and small intestines and had to be dissected off; it was tied with catgut, cut off, and the pedicle dropped back. I now discovered a small cyst of the broad ligament which I also removed. The right ovary seemed to be healthy, so that I did not attempt to remove it. I now introduced three deep silver sutures and was on the point of cutting off the catgut which held the ovarian pedicle, when it slipped off and the pedicle dropped into the abdominal cavity; the bleeding was profuse until I finally seized the pedicle again, transfixed and tied it with braided silk; the latter was cut short and the pedicle dropped into the abdominal cavity. The latter

was then thoroughly cleaned ; and I might say here that to this part of the operation I pay particular attention, as I consider it the most important. The abdominal wound was then closed with the silver sutures already introduced, a few superficial silk sutures were added and an antiseptic dressing applied. The woman rallied well. I suggested to the doctor to treat the case as I had treated the above-described cases. Two weeks after the operation, when I was getting anxious about the result, I received a letter from Dr. De Vore, which contained such sentences as these : " Mrs. P. is doing splendidly, has not had a rise of temperature since the operation." " Not a convulsion nor pain in the head, and she says she feels as well as she ever did." " It is a success in every sense of the word."

Too short a time has elapsed since the last operation, but I am sanguine that the success will be permanent.

I am a firm believer in Battey's operation.

I am an adherent of antiseptic surgery.

I do not believe in the spray.

I am disgusted with catgut.

In general I might conclude that Battey's operation is not only justifiable, but really we might say it is *criminal neglect* not to perform it in cases which *fail to be benefited* by other treatment. It is a last resort, *after every other proper* treatment has failed in those cases which are caused by ovarian disease, such as hystero-epilepsy, dysmenorrhea, and menorrhagia due to fibroid tumors, and which either *endanger the life of the patient or make life a burden to her.*

#### AN IMPROVED METHOD OF CUTTING THE VESICO-VAGINAL FISTULA FOR THE CURE OF CHRONIC CYSTITIS.

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BY

PHILANDER A. HARRIS, M.D.,  
Paterson, New Jersey.

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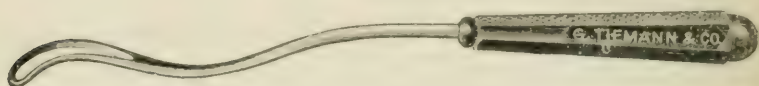
THE operation devised and first practised by Dr. Emmet for the cure of chronic cystitis by continued drainage of the bladder through a vesico-vaginal opening, may be regarded as one of the most satisfactory procedures in operative gynecology.

Assured that this is the most rational method of treatment



for all cases which have resisted other means, I feel warranted in describing an easy and certain way of cutting the fistula.

During the past summer, while assisting Dr. Walter L. Ranney in a series of operations on the female cadaver, I sought to simplify the operation for making the fistula in the following manner: A fenestrated staff, shaped as shown in the accompanying illustration, is passed through the urethra into the bladder. The convex surface of the fenestrated portion of the staff is then pressed firmly against that point in the median line which may be selected for the opening. While the vesico-vaginal tissues are thus stretched with a degree of tension, a tenaculum is thrust through all into the bladder. The tenaculum is then rotated half-way round, and its point brought out at a distance of about one-quarter of an inch di-



rectly posterior to that of its introduction. The staff having served its purpose [that of counter-presser while transfixing the tissues with the tenaculum], is now withdrawn. The point for the opening being still firmly held by the tenaculum in the left hand, is divided by one sweep of the heavy curved scissors in the right hand. A little practise will enable the operator to quickly make either a round or oval opening at will.

Repeated operations have demonstrated the advantage of a special tenaculum as a companion instrument to the staff. This tenaculum is strongly made, with a short blade, and its point bent at an angle of 85 degrees in relation to the blade or handle. The handle is chased or roughened on the side directly corresponding with the point of the instrument, as a guide to the operator while rotating after its introduction into the bladder.

Operators, in describing the usual method of cutting the fistula, have wisely cautioned us to always keep in mind the location of the ureters and their vesical orifices, that injury to them may be avoided; also to make the opening oblong with circular margins, without sliding the vesico-vaginal tissues on each other.

It must appear that operation by the fenestrated staff, tenaculum, and curved scissors is easily accomplished, and that this method is well calculated to insure us against the unpleasant accidents to which our attention has been more particularly directed.

The fenestrated staff and tenaculum are manufactured by Geo. Tiemann & Co., of 67 Chatham street, who have kindly loaned the electrotype for the accompanying illustration.

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#### A NEW EXAMINING REST.

BY

EDWARD JACOB FORSTER, M.D., L.M.,

Boston, Mass.

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PERHAPS one reason that the general practitioner does not oftener attempt the treatment of gynecological cases is the want of a proper table upon which to make the required examination.

The tables of Mann, Goodell, and Francis, with their various modifications, while meeting every requirement of the specialist, are too costly for the general practitioner. The amount of room required, and the fact that they cannot be utilized as simple office tables, is also a bar to their general use.

The special chairs of Wilson and others have the same objection as to expense, and nearly the same as to room occupied; while those which have immovable arms are unfit for the use of the duck-bill speculum.

Such tables and chairs as these have the further objection that their peculiarity of construction gives them an appearance which is suggestive of their use, and which may be alarming and repulsive to certain nervous patients who are consulting the general practitioner on matters others than uterine.

The table of Chadwick, on account of its level top and general simplicity of appearance, is an ornamental article of office

furniture, but the lack of any means by which the top can be inclined detracts from its usefulness.

All the special tables, except the last, are so made that in their length, which is usually three and a half feet, there is a drop of three inches. Some also have a lever attachment, by using which they have a side inclination of about four inches.

Upon a table having these two inclinations a patient can best be placed in the position described by Sims, and known as the latero-abdominal.

Without these inclinations, or at least one of them, it is almost, if not quite impossible, except to the expert specialist, to use the Sims speculum without an assistant, and then not advantageously.

To obviate the objections given, and to place within the means of all, something which will take up but little space, but,

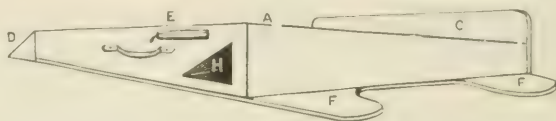


FIG. 1.

on the other hand, offer every advantage for the proper examination of a patient, I had made the EXAMINING REST, which is here described.

If I had carried out my original idea of having a movable top with the proper inclinations to place upon my Chadwick table, I should have had an ungainly affair; I therefore reduced the length of such a top one-half, but kept the angles of inclination the same.

The rest is made of two pieces of half-inch black walnut board 23x21 inches, so placed in relation to each other that when the under piece (B) rests upon a level surface, the upper (A) is inclined from before backwards and from side to side at the same angles as the top of Goodell's table.<sup>1</sup>

At the lower side, right hand from the examiner, is placed a bevelled piece (C) about two and a half inches in width, which is to prevent the patient from slipping off, and answers also to make the sides of equal width, so that when the rest is turned completely over (Fig. 2) it can be used for examina-

<sup>1</sup> Munde's "Minor Surgical Gynecology," Fig. 11, p. 29.



tions on the back, and then has only the inclination from before backwards.

The piece (B) has near its front edge two semicircular holes (G) cut for the reception of the boot heels, and is extended in front on either side to give a support for each foot; the other side of these extensions serve when examining in Sims' position, the one for the patient's left foot, the other for a convenient shelf for instruments.

The space between the upper and under pieces is partially utilized to hold two pieces of wood, which are to be used in making the surface of the rest continuous with that of the table used; the triangular wedge-shaped piece (D), which is

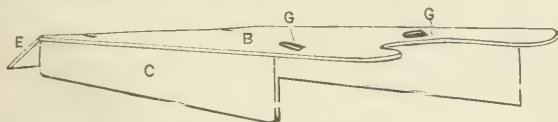


FIG. 2.

stowed in (H) when not in use, when the latero-abdominal is desired, the flat one (E) when the dorsal. Since first showing the rest before the Obstetrical Society of Boston, October 14th, 1882, and after the cuts were made, I have had a hole of proper size cut in the front directly under (C), Fig. 1, into which the piece (E) can be inserted, and thereby a better foot-rest obtained.

The small size and light weight of the rest, about eleven pounds, makes it portable as well as convenient to stow away when not in use. It can be placed upon any level table or desk of sufficient length, height, and strength, or even upon a bed. Although not necessary, it may if desired, be secured to the table by a clamp.

When in use, it should be covered with a folded comforter or shawl unless placed upon Chadwick's table, when the mattress which accompanies the latter may be used.

The rest is made by Messrs. Leach & Greene, 1 Hamilton place, Boston, who furnish it for \$10.

NOVEMBER 13th, 1882,

22 MONUMENT SQUARE, CHARLESTOWN DIST., BOSTON.

ON THE VAGINAL SPECULUM, WITH A DESCRIPTION OF  
A NEW FORM OF THE INSTRUMENT.

BY

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for Women, and Physician-Accoucheur to the Western Infirmary,  
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IN dealing with cases of disease of the vagina and uterus, especially in hospital practice, it has often occurred to me that the good points in certain specula might be combined in one instrument for common use, leaving the special forms for distinctly special cases. Three years ago I set myself the task of attempting to devise such an instrument and the present essay describes that which resulted and which has been in use for the past twelve months in the Dispensary of the Western Infirmary.

Perhaps the most direct method of dealing with the matter may be to put what I have to say in the form of answers to the three inquiries: A, What is desirable in a good speculum? B, What is lacking in the present forms? and C, How does the new instrument attain the ends in view and in what is it still lacking?

A. The following may be considered to be the chief desiderata in a good speculum. 1. That it shall show well the cervix and upper part of the vagina. 2. That it shall not greatly distort the parts. 3. That it shall be so adaptable to individual vaginæ as not to give pain. 4. That it shall be self-retaining and thus leave both the operator's hands free. 5. That it shall give free access to the cervix for operative interference. 6. That it be simple and easily kept clean. 7. That it be easily carried and not easily broken. It may be argued that it is physically impossible to combine all these advantages in one instrument, and this is probably true, but the more nearly we can do so, the better.

B, What is lacking in the present forms? Let us take the most valuable specula in ordinary use and mention their demerits, and while doing so it must not be understood that I fail to appreciate their several good points. The tubular

speculum, of which Fergusson's may be held as the type, has this disadvantage that it does not stretch the upper and wide part of the vagina, and that where the orifice is undilated, an instrument too small to give a good view of the cervix is yet too large to pass without causing considerable pain. It also directly compresses the cervix and so may conceal diseased conditions. The glass ones are fragile and those covered with india rubber are apt to crack, and harbor dirt. The univalve speculum, such as Sims', while indispensable for operative work, has the drawback that it requires an assistant where any manipulation is necessary, and the forms of accessory apparatus for rendering it self-retaining



FIG. 1.

are all so comparatively complicated as not to have come into general use. The most of bivalve and multivalve specula have this in common that the vulvar orifice is of a fixed and, because they are used for various vaginae, necessarily not large, size, thus giving an imperfect view of the cervix; causing pain when used for nulliparae and rendering them useless for anything but the most restricted operative interference.

C. How does the new instrument attain the ends in view and in what is it still lacking? By reference to the woodcut, Fig. 1, the idea with which I started may be apprehended. Two parallel blades starting from the centre of a curved bar on which they slipped easily, would thus diverge at their points, so as to strain open the upper and larger part of the vagina and thus show the cervix while not unduly dilating the vulvar orifice. The blades retained their position because the elasticity of the vaginal walls caused them to lock on the bar. So



far as I know, this method of fixing the blade is original. This instrument was used for a little while, but it was found to be a serious disadvantage that the opening of the upper and lower parts of the vagina could not be made independently. This led to various modifications and eventually to that I am about to describe. The instrument, Figs. 2 and 3, consists of two blades an inch and a quarter broad, the anterior three and a half and the posterior four inches long. These are flattened at the points, but otherwise like those of Cusco's bivalve. The bar on which they slide is hinged in the middle so as to permit the uterine ends of the blades to be separated from each other to the extent of four inches. From the jointed ends of the bar, or rather bars, for the hinge divides it into an anterior and posterior part, two legs proceed which are notched on their ex-

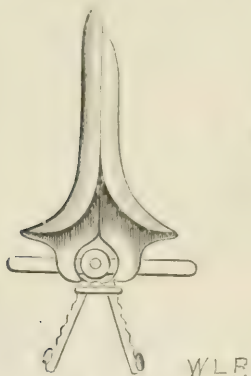


FIG. 2.

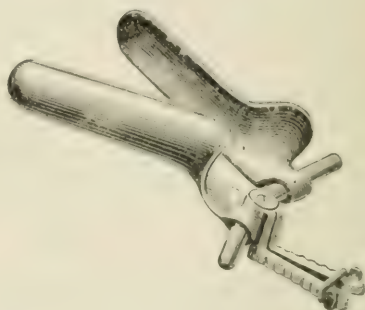


FIG. 3.

ternal surfaces and have two flat finger pieces at the ends. When these ends are pressed together the bars form an obtuse angle at the hinge and thus the blades are caused to diverge at their points. When it is desired to retain the blades at a given degree of divergence, a catch, which consists of an oblong piece of metal surrounding the legs, is made to slip down along them, and fix itself in the notches on either side. The anterior and posterior bars are each an inch and a half long and the blades may be slipped out to the extremities so as to widen the vulvar orifice to the extent of two and a half inches. The notched legs are on a plane half an inch below the level of the hinge so as not to hinder manipulation through the speculum. The whole is made of metal, nickel-plated, and its construction

will be more readily understood from looking at the woodcuts than from any further description in words.

This speculum is used in the following manner. The patient lying, either in the dorsal or left lateral position, the points of the blades are introduced with their edges antero-posteriorly, but when once fairly within the vulva they are turned to that their flat surfaces come to occupy this position. The points are then pushed well up into the posterior fornix before they are separated, and when this is done, the short anterior blade slips over the cervix and takes its place anterior to it. Before this is done, however, it is better to slip the blades, usually only the posterior one, along the bars so as to take advantage of the vulvar orifice of the vagina as far as is consistent with the avoidance of pain. Having expanded the blades as far as necessary by means of the notched legs, they are fixed in this position and the cervix is open to sight and treatment. In withdrawing the instrument all that is necessary is to touch the catch with the point of the finger, when the blades fall together, turn the edges antero-posteriorly, when the vulvar ends slide towards the hinge and the whole slips out of the canal.

Let us now compare this instrument with the ideal one with which we started. 1. This does show the cervix and upper part of the vagina well, the vulvar orifice being strained as far as it can be in the individual vagina, the points of the blades are independently opened till the most is made of the space in the upper reach of the canal and, the blades being both comparatively short, the cervix drops well into view. All the vaginal walls are seen, except those parts covered before and behind by the blades; not so much, of course, being visible as with Sims' instrument which only covers the posterior wall.

2. This speculum does not distort the parts unless the points are very fully expanded, when, by pulling on the cervical attachments of the vagina, the os is drawn open and the interior of the canal is exposed to view. When opened only so far as to allow the cervix to pass between the blades, a natural view is obtained.

3. Only one speculum is needed for all kinds of vaginæ. In the case of a nullipara, the blades are slipped either a little way along the bars or not at all, the points only being opened, while in a multipara, where the external orifice is large, the

blades are carried to near the extremities of the bars, before the points are caused to diverge and thus the whole canal, both above and below, is put on the stretch. The saving of pain in the case of a woman with a narrow tender vagina is very great and yet the utmost is made of what space there is.

4. As the blades are always more widely open above than below, this instrument is perfectly self-retaining and leaves the operator's hands perfectly at his disposal.

5. There is very free access to the cervix. By taking advantage of the arrangement for dilating to its utmost the entrance to the vagina, I have been in the habit of using, not only the sound, Playfair's probe, the uterine lancet, etc., but also Ellinger's dilator, and I have found it a considerable advantage to be able to watch its effect on the os externum. By its help one can hook up the cervix with a tenaculum and introduce a tent with extreme ease. As the points of the blades are flat and the one shorter than the other, it is very convenient for placing a tampon in the vagina, and with it the whole canal can be firmly packed from within outwards.

6. My original idea was to have neither screws nor joints to harbor dirt or be difficult to keep clean. The only specula I know of which open independently at the upper and lower parts of the vagina are Arnold & Son's improvement on that of Mazarem, of Lisbon (Cat. Obst. Instruments. Lond. Obst. Society, 1879, p. 350), Goodell's "base-expanding" (Lessons in Gynecology, 1880, p. 27), and Mundé's modification of Sims' and Nott's speculum (Minor Surgical Gynecology, 1881, p. 84), and I submit that these are less simple than the one under consideration, they all having both joints and screws. In order to thoroughly clean it, the blades are simply slipped off the bars, this is done in a second or two, and each part washed every time it is used.

7. Being of metal, it is not liable to be broken, and as I carry it with the blades unshipped and laid alongside the bars in a pocket of chamois leather, the whole measures  $5 \times 3\frac{1}{2} \times 1$  inches, and thus takes up little room in an ordinary pocket.

This instrument has certain disadvantages. Being of metal, it is a good conductor of heat and so requires warming in cold weather. It could not be used with the actual cautery for the same reason, and strong mineral acids would destroy its reflect-



ing surface. To obviate these disadvantages, I am getting a pair of blades covered with vulcanite. In bleeding the cervix, one has to mop up the blood with absorbent wool, as it cannot be run into a vessel as with a tubular speculum.

Experience in its use has shown that, with it, work can be carried on with great rapidity. There is no choosing of a speculum, the one suits all cases; the closed blades are easily passed into position, opened, fixed and withdrawn, so that no time is lost. The opening of the blades can be managed so as to stop whenever discomfort begins to be experienced, as each notch on the legs corresponds to only an eighth of an inch of expansion at the points of the blades.

I may add that the instrument is made and sold by Messrs. W. B. Hilliard & Sons, 65 Renfield Street, Glasgow.

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VESICO-VAGINAL FISTULA PROBABLY OCCASIONED BY USE  
OF BLUNT HOOK.

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BY  
W. W. SEYMOUR, M.D.,  
Troy, N. Y.

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IN June, 1882, I was consulted in my office by a practitioner regarding a patient delivered by him just a week before, who was unable to hold her urine at all. My first inquiry was whether it was not a case of overflow from retention, but I was told that the amount of urine was too large and that the bladder had been well emptied before labor by catheter, and since confinement the urine seemed to keep constantly running away. Inquiry elicited the fact that the patient, forty-two years of age, in this confinement (her ninth) had been for several hours under the care of a midwife when the practitioner was called. He found the os nearly dilated and a presentation of the breech; when the os was fully dilated he ruptured the membranes, and three hours after, as little progress was made, attempted to use a blunt hook to hasten delivery. Delivery of a dead child was speedily effected and no examination was made until I was consulted. I immediately visited the patient and on making a vaginal examination both fingers passed into an opening in the base of the bladder. The patient was then put upon the side and a Sims' speculum was introduced revealing a vesico-vaginal fistula apparently of trau-

matic origin, one and a half inches long and extending from near the posterior end of the urethra directly backward. There was apparently no loss of substance, but the edges of the wound were thickened and everted. My advice was to syringe out the vagina twice a day with a gallon of hot water and after each irrigation to anoint the vagina and the inner surface of the thighs with an abundance of vaseline and then wait until the hottest weather was over, perhaps some ten weeks, before operating to close the fistula. So successful was this preparatory treatment that absolutely no excoriations formed in the vagina or external parts, and when I operated on the 27th of September, the fistula was only half an inch long; and the only cicatrices, the linear cicatrix, corresponded to the healed portion and the edges of the button-hole. The patient was extremely fleshy, weighing over two-hundred pounds, which made it very difficult to operate. She was put in Sims' position, and after considerable difficulty the fistula exposed. But as the thin-edged fistula lay at the bottom of a funnel over an inch deep, made by the thickened vaginal mucous membrane, the vivifying of the edges was very difficult. However, I freshened not only the edges of the fistula proper, but the sides of the funnel and introduced five silver wire sutures and fastened them by twisting. A Skene-Goodman catheter was then introduced, after washing out bladder and vagina. All the sutures were removed on the eleventh day, but the middle one leaked slightly. The catheter was continued two weeks longer; the vagina was washed out each day twice, the catheter once. On the twenty-fifth day the catheter was removed and the bladder injected and found intact. From this time on the patient had normal control of her bladder.

My only regret is that I did not at first have the patient assume a prone position and keep the bladder empty by a retaining catheter, at the same time employing the vaseline and hot water, as I did. Of course, fistulæ without loss of substance are comparatively rare, but to me it seems that where the fistula was discovered early, a prone position, a permanent catheter, hot water irrigations, and vaseline anointings, would render a fair percentage of operations unnecessary.

## CORRESPONDENCE.

## VERY HOT VAGINAL INJECTIONS.

EDITOR AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR :—In perusing the October No. for 1882 of your excellent JOURNAL, page 813, I was impressed with the article on the Use of Hot Water Injections for Uterine Diseases, by Dr. P. V. Schenck. As I have had a somewhat extended experience in the use of the same for similar purposes, though in a different mode, I feel it may be proper to communicate the same to the profession, especially as there has been, and still is, a great discrepancy between practitioners as to the best and most effective means of making the application, as well as to the recuperative effects. As to the convenience of the same, all will readily concede the advantage to be in favor of that method which has least complications and attended with least inconvenience to the patient when equally efficacious for good. Some twenty-five years ago, when treating cases of this character, and finding hot water alone, or medicated, of great value, it became a matter of much importance how best to make the application to the uterus and surrounding parts, and at the same time avoid the too great heat and even sense of scalding to the external parts by the discharge of the same as it passed off when thrown in by the ordinary vaginal syringe, or through any pipe attached to a hose or other apparatus, conveying the fluid from a point above the patient to the parts, by force of gravity. Not alone this inconvenience was experienced, but also that of the means to dispose of the fluid as it passed away. To obviate all this, I made use of a Nott's or similar trivalve vaginal speculum and one of Goodyear's long-pipe rubber syringes. I had my patient placed upon a cot or lounge (proper chairs not then being in use) on the back, with the hips somewhat raised above a level with the lumbar region; the knees well drawn up and separated, and feet so resting as to be easy in the whole position. Then the speculum being introduced and so expanded as to increase the capacity of the vaginal parts sufficiently to contain from two to four ounces of fluid, the vagina was filled with the syringe, carrying from a half to an ounce, slowly and by a very moderate action of the syringe. Commencing with the temperature at about 105° F., I gradually increased the same as it was comfortably tolerated, in the majority of cases to 125° F., and in many even to 135° F., and in one



case to 140° F., without producing either congestion or inflammation. The latter temperature was used in cases of internal or interstitial uterine growths, also in enlargement of the ovaries from incipient cystic growths. Each sitting lasted from ten to twenty minutes, the water being constantly withdrawn and renewed by warmer water, with no sort of inconvenience or discomfort to the patient, or even wetting or soiling the clothing in the least. At last every drop was removed from the vagina before the patient rose to her feet, and in no case was there pain referable to the hot water. Pain occurred only in a very few cases, where the water was thrown with too great force directly into the os uteri.

This you perceive will conflict somewhat with Dr. Schenck's directions, viz.: "not over 120° F." But I can readily understand why the doctor has been thus guarded. From the fact that the patient could not tolerate the scalding caused by the passage of the hot water over the external parts, which would be unendurable at a greater heat than he names, he enters this caution. If now the doctor, or any one who is desirous of receiving the greatest benefit possible from this means, has understood me, I have no hesitation in assuring such that they will find these vaginal baths of *very* hot water not only an excellent adjuvant, but more, one of the most potent means at our command, for nearly all uterine complaints at all amenable to remedial measures.

T. M. COOK, M.D.

SANDUSKY, OHIO.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

(ABSTRACT.)

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Meeting, November 7th, 1882.

### RECURRENT FIBROID TUMOR OF THE ABDOMINAL WALLS.

DR. H. T. HANKS presented a fibroid tumor, which was the second one that he had removed from the abdominal wall of the same patient within three years, and a third one had been removed by another physician. The first tumor was situated between the internal oblique and the transversalis muscles, on the right side, near Poupart's ligament, while the last one was situated in the transversalis muscle, on the left side, near the umbilicus, and had more

of the characteristics of malignant disease. The following was the report of the microscopical examination made by Dr. W. H. Welch:

The specimen was hardened in absolute alcohol, and showed, on microscopical examination, the following condition: A dense fibrous base, supporting numbers of spindle cells in spots, and groups of round cells were seen. There were places where the prominence of the spindle cells suggested sarcoma. The tumor, both from its clinical history and from its essential structure, may be classified among so-called recurrent fibroids.

DR. LEE remarked that a recurrence of fibroid tumors in muscular tissue was very exceptional, this being the only case of the kind which he had seen.

#### VESICAL CALCULUS WITH A HAIR-PIN NUCLEUS.

The specimen was presented by DR. W. R. GILLETTE, who had removed it from a German girl, nineteen years of age, at St. Francis' Hospital. Her symptoms were emaciation and incontinence of urine. The stone, with the hair-pin nucleus, was removed through the vesico-vaginal septum. The patient professed to have no knowledge of how the hair-pin had entered the bladder. Dr. Gillette also presented another specimen, with a similar history, which was removed from a patient at Charity Hospital some years ago.

DR. GARRIGUES and DR. HANKS each mentioned a similar case.

DR. LEE had seen a calculus, removed from a man at Bellevue Hospital some years ago, by Dr. Van Buren, which had for a nucleus a head of wheat that the patient had introduced partially into the urethra and was afterwards unable to extract. Some years ago he presented to the Pathological Society two specimens of stone in the female bladder, which had for a nucleus the handle of a spoon. One he had removed himself; the other was removed by another surgeon.

DR. B. F. DAWSON remarked that in the Army Museum at Washington there were pieces of brick which had been removed from the bladder of a negress.

#### ABDOMINAL HYSTERECTOMY FOR PROLAPSUS UTERI AND MULTIPLE FIBROIDS.

DR. BACHE MCE. EMMET narrated a case as follows: The patient first came to the Woman's Hospital five years ago, suffering from procidentia of the uterus, which was partially relieved by certain plastic operations on the vagina. Last spring Dr. Emmet performed Le Fort's operation, which proved successful; but some months afterward the patient gave way to a fit of anger, and the uterus, which contained a large fibroid tumor, was again crowded down toward the vulva. The patient was suffering greatly from pain, and desired to have the tumor removed. Dr. Emmet performed the operation on Friday last, removing the body of the uterus with a portion of the cervix, the ovaries, and the tubes. The mass was composed of eight fibroids, mostly intramural. In order to avoid hemorrhage, Dr. Emmet made use of a plan first introduced, he believed, by Olshausen, but since constantly practised in England,

viz., that of encircling the whole mass at its base by a long piece of Esmarch's tubing prior to its amputation. This tubing, being put about the tumor at full tension, was grasped at the point of crossing of the two extremities by a strong forceps, and this was firmly held by an assistant. Prior to the removal of this constrictor, he secured the stump in the Kœberlé *serre-nœud*, having previously transixed it with two needles. The abdominal wound was then closed, and the pedicle was thoroughly smeared with Monsel's salt. At the beginning of the fifth day, the patient was doing well, but suddenly extensive peritonitis developed, from which she died on the sixth day. There had been a good deal of sloughing of the abdominal wall about the stump, which was probably due to the free use of Monsel's salt, which had liquefied and run down. The wire, which had been twisted so tightly about the pedicle, was found to be loose, showing that any tendency to hemorrhage that might have existed had been controlled by the tanning of the pedicle.

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*Meeting, November 21st, 1882.*

EMBEDDED PESSARY.

DR. PAUL F. MUNDÉ presented a hard-rubber Hodge pessary which he had recently cut out of its bed in the vagina, seven years after its insertion.

PUNCTURE OF THE GRAVID UTERUS DURING THE PERFORMANCE OF  
OVIOTOMY. RECOVERY.

Dr. C. C. LEE related the case as follows: The patient was a woman, twenty-eight years of age, who was sent to the Woman's Hospital by Dr. Hanks, for the removal of an ovarian cyst situated on the right side. The presence of the cyst was supposed to have been the cause of several miscarriages, and, as the patient was then three months pregnant, it was thought likely to prove so again. After making the usual incision for oviotomy, the exact relation of the tumor to the uterus was ascertained. In turning the patient on her side, preparatory to puncturing the cyst, the latter was let go, and, unknown to Dr. Lee, the uterus took its place, rolling up into the abdominal incision, and was punctured instead. A large trocar penetrated the body of the womb to a depth of about two inches, entering at a point about two inches below the fundus. No fluid escaped when the trocar was withdrawn. The uterine wound was sewed up with carbolized silk, the long pedicle of the ovarian cyst was then ligated, the cyst was removed, and the abdominal wound was closed. Abortion had not occurred, and the patient was doing well. There had been vomiting, which was probably due to the influence of the anesthetic. It was a noteworthy fact that the pedicle in this case was so long that the tumor, which was developed from the left ovary, lay upon the opposite side, in the region of the right ovary. Dr. Lee thought the silk-worm



suture which was used to close the abdominal wound possessed no advantages over the carbolyzed silk ligature. It was much more liable to break, and was less easy to handle.

#### HEGAR'S OPERATION.

DR. LEE also related the following case: An unmarried woman, aged thirty-six years, was sent to the Woman's Hospital by Dr. Streeter, of Watertown, to have oöphorectomy performed for the relief of symptoms due to a large multilocular fibroid tumor of the uterus. She had been suffering from menorrhagia and dysmenorrhea for years, and had been unable to obtain relief. The tumor was as large as a fetus at the seventh month, lay principally on the right side of the abdominal cavity, and extended as high up as the umbilicus. The uterus could not have been extirpated without imminent danger to life. After an unsuccessful trial of medicinal treatment for a month, it was decided, at a consultation of the surgeons of the hospital, that Hegar's operation should be performed. Dr. Lee removed the Fallopian tube on one side and both ovaries. The case was progressing favorably since the operation. The right ovary was bound down by adhesions, and extremely difficult to remove. Where adhesions were not present, however, the operation was not a difficult one. This was the third time it had been resorted to at the Woman's Hospital within a month, twice by Dr. Thomas, and once by himself. The patients were doing well. According to the statistics of the operation as given in the *AMERICAN JOURNAL OF OBSTETRICS*, January, 1880, out of one hundred and twenty cases only twenty-eight deaths had occurred. The success of the operation in relieving menorrhagia and dysmenorrhea had been so great, and the dangers attending its performance had been so small, that Dr. Lee thought it should be resorted to in these cases more frequently than had been done in the past.

With regard to the first case, DR. GARRIGUES, who was present at the operation, said he did not think the trocar could have entered the amniotic cavity, else it would have caused miscarriage.

DR. P. F. MUNDÉ mentioned several cases in which the gravid uterus had been accidentally punctured during an operation, but, so far as he knew, this case was unique in that the patient recovered without miscarriage.

DR. C. S. WARD remarked that Dr. Thomas had lately performed Hegar's operation in a third case.

DR. LEE referred to Mr. Lawson Tait's experience regarding the difficulty of including the Fallopian tube in the same ligature with the ovary, and the necessity for removing the tubes in order to guard effectually against the occurrence of subsequent menstruation and a return of the symptoms.

#### CESAREAN SECTION.

DR. H. J. GARRIGUES presented the uterus and its appendages, the pelvic bones, and a fetus, from a case in which he had recently

performed Cesarean section. He remarked that, besides deformity of the pelvis, there was disease of the lumbar vertebræ, of the lungs, and of the heart, and that the patient was also suffering from several minor ailments. The last three lumbar vertebræ were fused together, and had caused a slight lordosis in this region; the sacrum was narrow, broader behind than in front, curved greatly backward, and also somewhat to the left, while the coccyx was curved somewhat to the right, the two bones presenting a lateral curve resembling in some degree the letter S. The superior surface of the ilium, instead of being concave, was flat anteriorly and convex posteriorly. The posterior superior spinous processes of the ilia were only six centimetres apart, instead of ten; the antero-posterior diameter of the inlet was greater than the lateral; the ilio-pectineal eminences were very prominent. The tuberosities of the ischia were only about one-third the normal distance apart, and were very thin. The pubes appeared to be pushed forward and upward, and the curve between the pubic bones was much smaller than normal. In general, the pelvis was of a funnel shape; the plane of the brim was comparatively large, while the outlet was extremely small; and the ellipsis of the inlet was in the opposite direction from the normal. Dr. Garrigues believed that the deformity of the pelvis was secondary to caries of the lumbar vertebræ, and that it could be accounted for on mechanical principles, or by the action of the muscles.

## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

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*Stated Meeting, January 18th, 1883.*

DR. PAUL F. MUNDÉ READ A PAPER ON SECONDARY PUERPERAL  
HEMORRHAGE.

The majority of obstetrical authorities scarcely refer to the possibility that alarming uterine hemorrhage may occur as late as several weeks after confinement, and only the standard works of Barker, Winckel, Playfair, Spiegelberg, and Barnes devote a fair amount of space to this accident. In September, 1880, at the annual meeting of the American Gynecological Society, Dr. Theophilus Parvin read an elaborate essay on this subject. The fact that so little had been written concerning it, and also the fact that the accident is comparatively rare and grave, are sufficient reasons for reporting the following case, which presents certain peculiarities not referred to by Dr. Parvin.

On August 2d, 1882, Dr. Mundé saw in consultation a patient who

was in great danger from uterine hemorrhage. She was twenty-five years of age, the mother of three children, and had always been healthy. She was taken in labor on July 16th with her fourth child. Labor progressed slowly, and after it had lasted twenty-one hours, the head almost resting upon the perineum and no advance being made, an attempt to deliver with the forceps failed. The cranium was then opened and the forceps were again used, but they refused to hold. The head was then delivered with the cephalotribe. The cause of the difficulty was hydrocephalus. Hemorrhage was quite profuse, but soon ceased. The placenta was adherent to the right side of the fundus, and required complete separation by the hand, special care being taken not to leave any fragments behind. Two fluid drachms of ergot were administered by the mouth, and all hemorrhage ceased. On examination it was found that the anterior lip of the cervix was quite badly torn. The patient appeared to be doing well for the next six days, although the temperature varied from 101° to 102° F., and the pulse averaged 120. The lochia were fetid from the third day on. Uterine injections washed away numerous small shreds and coagula, until the lochia lost their offensive odor. On July 28th, the lochia again became offensive. The discharge was more scanty, serous, with admixture of a reddish-black fluid. On the sixteenth day after labor, a profuse hemorrhage began, and when the attending physician saw the patient four hours and a half afterward, she was almost exsanguinated. The bleeding was arrested for a moment by intrauterine injections of hot water, but it soon recommenced. It was again checked by hot-water injection and tamponing the vagina. When Dr. Mundé saw the patient, he found her with perfectly pallid face, hands and feet cold and clammy, pulse 120, *very* weak, and consciousness unimpaired. The fundus of the uterus was on a level with the umbilicus, irregular in outline, the right horn extending several inches above the naval, and there was moderate tenderness. After preparing fresh carbolized tampons, procuring a few ounces of the pure tincture of iodine, and a fountain syringe filled with hot carbolized water, he rapidly removed the tampons and at once passed his hand into the dilated vagina and the distended uterine cavity, which he found filled with soft, exceedingly offensive, dark-colored coagula, largely mixed with shreds of decidua. The internal surface of the uterus was soft, pulpy, and the mucous membrane apparently very much thickened. Great caution was necessary in order to avoid injuring, perhaps perforating, the pulpy wall of the organ. After emptying the uterine cavity, he introduced a long metal tube and washed it out with carbolized water from the fountain syringe, the water being as hot as the hand could bear. The patient did not complain of the heat. He then introduced a large cylindrical speculum; through it the tube of a long cervical syringe, and then injected half an ounce of pure tincture of iodine into the uterine cavity, using some force in order to insure the thorough distribution of the iodine. Cotton tampons



joined with a cord were again applied merely as a safeguard against further hemorrhage in case the iodine failed to check it, and he directed that they be removed in six hours. The injection of iodine gave no pain whatever, nor was it followed by shock. Six hypodermics of brandy were given, and ten drops of aromatic spirits of ammonia, five drops of spirits of camphor, and a teaspoonful of brandy were ordered in ice-water every half-hour. A hypodermic syringe full of Squibb's fluid extract of ergot was injected into the subcutaneous cellular tissue of the abdomen, and an ice-bag was placed over the uterus. A bottle of hot water was placed at the feet. Directions were left to inject the uterine cavity very gently with tepid carbolized water after removing the tampons, for the purpose of preventing the decomposition of the coagula produced by the iodine.

On visiting her twenty-four hours later he learned that no further hemorrhage had occurred, and that the uterus had been washed out several times. There was hectic flush and a peculiar sweetish odor about the patient which sustained the conviction already expressed, that the patient was suffering from septic endometritis. Tepid injections of a one-sixth per cent solution of permanganate of potash were made into the uterus every three hours, more or less according to the offensiveness of the discharge. Ten grains of salicylate of soda were to be administered every two hours in case the temperature should rise above 102 F., and the stomach did not reject it; stimulants as might be required; nutritious enemata; prognosis unfavorable. In the course of the subsequent treatment intrauterine injections of the sulphate of quinine [sulphate of quinine, one drachm to the quart of water] were used at the suggestion of the attending physician, and apparently with marked benefit. Contrary to all expectations, the patient slowly improved; the offensive lochia continued several weeks after the hemorrhage. At the end of five weeks of unremitting care, convalescence was complete.

Dr. Mundé then reviewed several points of interest in the case reported.

First. *The causes of secondary puerperal hemorrhage.* Constitutional: Hemophilia, mental emotion, functional disease of the liver, incautious use of stimulants, sudden assumption of the erect position. Local: Irregular and inefficient contraction of the uterus, clots in the uterine cavity, portions of retained placenta or membranes, retroflexion of the uterus, laceration of the vagina or vulva, laceration or erosion of the cervix, inflammatory ulceration of the cervix, malignant disease of the cervix, pelvic cellulitis, inversion of the uterus, premature sexual intercourse, loaded rectum. To these he added distended urinary bladder. Besides these, malarial poisoning was a well-recognized cause of secondary puerperal hemorrhage. General febrile disturbances were also causes of secondary metrorrhagia. Another cause, so far as he had been able to learn, spoken of by Winckel only, was disease of the inner

surface of the uterus, chiefly endometritis. Dr. Mundé believed that his case belonged in this class.

Second. *The date of hemorrhage after delivery.* The time at which secondary hemorrhage is liable to occur varies greatly, according to the character of the labor, the care taken in the third stage, precautions employed during child-bed, and accidental circumstances. Barker refers to instances as late as the fifth and sixth week after delivery, and Helfer speaks of one during the fourth week.

Third. *The significance of secondary hemorrhage* depends partly on the amount of blood lost and escaping, and partly on the origin of the blood. Hemorrhage depending on mere temporary atony of the uterus is less serious than if due to sloughing of the placental uterine thrombi or the bursting of a dilated vein. The occurrence of serious or fatal hemorrhage at a later date than the fourteenth day after delivery is certainly very rare. The evil consequences of protracted secondary hemorrhage are the debilitating effect upon the woman and subsequent uterine disease of some form or other.

Fourth. *The means employed to check the hemorrhage.* He recommended the method of injecting the iodine through a cylindrical speculum as a means of saving the vagina and vulva from inevitable contact with the fluid if the latter is simply injected into the uterus under the guidance of the finger. With reference to the application of the tampon after labor, it need scarcely be said that it should never be done unless the uterus was so contracted and constantly watched that no internal hemorrhage could take place. He applied the tampon temporarily as a possible safeguard against external hemorrhage until the patient had had time to rally a little, and with the positive understanding that the fundus uteri should be carefully watched until the tampon was removed. As a rule, it might be assumed that the same remedies and measures which are used to check primary uterine hemorrhage will be effectual in the secondary variety. For a protracted bloody lochial discharge, or a constant sanguineous oozing due to subinvolution, he had in a number of instances used successfully the pure tincture of iodine applied to the uterine cavity about twice a week on cotton-wrapped applicators.

Dr. Mundé concluded his paper by making reference to the means of preventing these hemorrhages, primary and secondary. The following rules were given for the management of the third stage of labor and the early puerperal state:

1. Always keep the hand on the fundus uteri from the moment the head appears at the vulva until the placenta is expelled.
2. Do not hasten the expulsion of the placenta too much.
3. Always watch the uterus with the hand, using gentle friction occasionally, for at least one hour.
4. Always give ergot by the mouth immediately after the birth of the child. If chloroform has been given, or if the labor has been unusually tedious, give ergot hypodermically, injecting a syringe-

ful of the fluid extract to the depth of one inch near the umbilicus.

5. If the uterus shows a reluctance to remain contracted, rub the fundus gently with a piece of ice, or insert a cone-shaped piece into the cavity.

6. Always make sure by palpation and percussion that the uterus contains no coagula.

7. Apply the child to the breast early.

8. Apply an equably tight binder, and, if there be tendency to hemorrhage, a pad should be placed over the fundus to secure its steady compression.

9. If there be laceration of the cervix or vagina, future oozing may be checked by mild astringent injections, or, if needed, by applications through the speculum. Immediate suture for laceration of the cervix appeared to him to be rarely feasible.

10. Do not allow the lying-in woman to leave her bed before the tenth day.

11. See that the bladder is empty, and is not interfering with uterine contraction.

12. See that the nozzle of the syringe is not introduced too far, and that too much force is not used in giving the customary cleansing injection.

DR. W. M. POLK, on invitation, opened the discussion, and said that he had seen but one case of secondary puerperal hemorrhage, meaning thereby hemorrhage sufficiently profuse to produce marked exhaustion in the course of twenty-four hours, and in that instance it occurred fifteen days after confinement. He applied a tampon because the uterus was firmly contracted, not large, and besides he watched the organ very closely. He had a misfortune with it which he believed was worthy of being borne in mind. The tampon was wet with a solution of persulphate of iron in water, three parts of water and one of the liquid preparation of the iron. It remained in position about twelve hours, and after its removal he instructed the nurse to thoroughly syringe the vagina, but she neglected to do so, and the consequence was complete atresia of the vagina, which required a secondary operation for its relief. Dr. Polk also referred to a second case which occurred in the practice of one of his friends, in which the hemorrhage occurred on the fifth day after confinement, and followed an intrauterine antiseptic injection given through an ordinary catheter. In that case, hemorrhage was so profuse that death took place almost immediately. He thought that the possibility of the occurrence of this accident should always be borne in mind in the usual practice of washing out the uterus with antiseptic solutions after confinement. Dr. Polk believed that the causes of this form of hemorrhage could be arranged under two heads: First, local; second, constitutional. His rule had been, whenever he had to deal even with milder degrees of septic inflammation of the endometrium, to be closely upon his guard against the occurrence of this accident. The tendency to improper contractions of the uterus in consequence of septic disease, and a failure to establish proper organization of the clot for the complete closure of the vessels, renders very trivial causes sufficient to produce hemorrhage. The conditions likely to interfere with the proper organization of the coagula in the



ends of the uterine sinuses are unfortunately very numerous. In the first place, all septic inflammations belonging to the uterus in the parturient state exerted a marked influence in this direction. The other causes were chiefly constitutional, and they were summed up under the head of cachectic states, such as malarial poisoning or poisoning from any of the minerals, as mercury, lead, etc. He did not approve of the practice which formerly prevailed, of forcing the uterus back into the hollow of the sacrum by means of heavy compresses and bandages, for the reason that such mechanical pressure gave rise to congestion of the organ, and was liable sooner or later to be followed by hemorrhage. Dr. Polk also preferred hot water to cold. He had seen a good deal of prostration produced after prolonged use of cold, and he had not seen any ill effects follow the use of hot water. Water into which the hand could be placed and retained was not too hot for the uterus, and he thought this was a sufficient test for the temperature of the water. So far as immediate operations upon the cervix were concerned, he agreed with the author of the paper that they were out of place. He thought the observations made by Dr. C. C. Lee had proved conclusively the correctness of this conclusion.

DR. E. L. PARTRIDGE directed attention to some of the less severe cases than those which had been mentioned by Dr. Mundé and Dr. Polk. He thought that only one-half of the question had been stated when it was said that secondary hemorrhage was due to retention of clots and portions of the secundines, etc., and that the real question was, What is the condition that allows this improper uterine contraction? He then proceeded to speak of the predisposing causes, both local and constitutional, which might give rise to secondary uterine hemorrhage. For example, a woman who suffered from such symptoms as would naturally be attributed to disorders of the circulation, such as headaches due to anemia, attacks of syncope, etc., would be liable to the occurrence of hemorrhage after labor. With regard to local predisposing causes, he mentioned chronic uterine diseases of various kinds, chronic cellulitis, which led to an increase in the size of the organ due to the preponderance of fibrous structure which was liable to interfere with perfect contraction of the organ at the termination of labor. The only alarming case of secondary puerperal hemorrhage which he had seen occurred on the ninth day after labor. It occurred suddenly, and was found to be the result of an annular slough which involved the entire vaginal end of the cervix. The loss of blood was sufficiently profuse to seriously jeopardize the patient's life. The history of the labor was that of early rupture of the membranes. And with regard to early rupture of the membranes, he had found that the persistence of the hemorrhagic element in the lochial discharge was very likely to exist, and it might be sufficient afterwards to produce what might be called hemorrhage. In such a case as that reported by Dr. Mundé, he would not hesitate to use a tampon, but, generally speaking, he would not hasten to apply a tampon until he was convinced that all other methods for controlling the hemorrhage were futile, because he thought there was a liability to the absorption of septic material. Dr. Partridge then made special reference to the importance of compressing the uterus for some time after the completion of labor, and for the purpose of preventing the occurrence of secondary hemorrhage.

DR. H. T. HANKS concurred in nearly all the statements made by

Dr. Mundé, and made reference to cases of undoubted malarial origin which had come under his observation. In one, the hemorrhage occurred fourteen days after delivery. It was controlled by the use of a battery and injections of hot water. He agreed with Dr. Polk that hot water was the more easily obtained, and more agreeable to the patient, and more effectual than cold. It could be easily injected through Chamberlain's long glass tube, or a small gum-elastic catheter. He did not approve of the use of the tampon. He also thought it unnecessary to give a drachm of ergot in all cases of labor. If there was any evidence of impending danger, certainly the ergot should be used, but if the patient was all right, why give something which produced uterine colic?

Dr. MUNDÉ, in closing the discussion, said that he did not concur with Dr. Polk with regard to the effect produced in the binder and pad. He thought their use was simply the application of the same principle which was so frequently applied for the arrest of hemorrhage in any other part of the body. With regard to the use of heat or ice, he did not wish to be understood that he would use ice-water, but he would simply take a piece of ice, and rub over the fundus, or introduce a piece into the cavity of the uterus. It had been his experience that the patient complained more with regard to the use of hot water than the use of cold. Dr. Partridge's remarks were exceedingly proper with regard to the etiology of hemorrhage in certain cases, but it had not been his purpose to enter upon the subject of the etiology of uterine hemorrhages which were of a more chronic character. He wished to speak chiefly of the acute cases. The subject of protracted lochial oozing he thought had not been sufficiently elaborated. He believed that the condition was exceedingly common, and that a great deal could be done in the way of its prevention and cure. With regard to the use of the tampon, he did not wish to be understood as recommending its introduction after delivery of a full-grown child. It certainly was a risky practice, but in his case he preferred to take the risk rather than to allow the patient to lose another drop of blood. But it should be insisted upon that it be very carefully watched. He did not believe that it was always necessary to use ergot after delivery, but at the same time he thought the woman was a little more safe with than without it, and he did not believe that it did any harm.

Dr. POLK remarked that he did not mean to criticise the application of the binder and compress, but simply wished to speak of the custom of continuing them for a week or ten days after labor.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Meeting, Thursday, January 4th, 1883.*

### DEATH FROM EMBOLISM.

Dr. WM. GOODELL reported the death of the patient from whom he had removed a uterine myo-fibroma. (Case reported by Dr. Baer, in the discussion of Dr. Drysdale's paper, at the meeting of December 7th, 1882.) The patient had progressed favorably, but

some weeks after the operation, while straining at stool, she had evidently loosened a portion of clot on the proximal side of one of the venous ligatures. It passed into the pulmonary circulation, and quickly caused death.

WHAT IS THE PROPER MANAGEMENT OF THE BOWELS AFTER  
PERINEORRHAPHY ?

DR. GOODELL had recently operated, for the relief of lacerated perineum, upon an insane woman who had been sent to him for that purpose from an asylum. Her insanity commenced after labor, and was probably due to a complete laceration of the perineum, extending two inches up the rectum. It had always been his habit to prevent any action of the bowels during the first week after the operation. This patient, soon after coming out from the influence of the anesthetic, tore off the bandage from her knees, removed the catheter, and by severe straining efforts secured a movement from the bowels. As she could not be controlled, laxatives were given to secure liquid stools, and avoid straining. The patient walked freely about the ward from the day of operation. The doctor expected the operation to be a failure under such circumstances; but, to his surprise, on removing the sutures, he found that in the rectal portion and the important part of the perineum union had taken place.

His attention has been called by this case to the question of the advisability of keeping the bowels constipated after this operation. He intends to try the effect of laxatives in future cases.

DR. R. P. HARRIS reported the case of a woman who, after the operation of perineorrhaphy, would strain, and her efforts at defecation opened the wound to nearly its original extent. In a second operation on the same patient, the bowels were kept free, and union was perfect.

DR. E. E. MONTGOMERY, after operating for lacerated perineum, does not use a catheter, but allows the patient to pass her water, as he does not consider healthy urine disadvantageous for a wound. He has been in the habit of using compound licorice powder to keep the stools liquid. He had had good success in both primary and secondary operations upon the perineum when the rectum was involved.

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*Meeting, February 1st, 1883.*

DR. B. F. BAER read the

ANALYSIS OF TWENTY-SEVEN OPERATIONS FOR THE RESTORATION OF  
THE LACERATED CERVIX UTERI, WITH SPECIAL REFERENCE TO THE  
EFFECT ON STERILITY AND LABOR.

In the discussion which followed the reading of Dr. Playfair's paper on "Trachelorrhaphy, or Emmet's Operation," before the Obstetrical Society of London, on March 1st, 1882, Dr. Herman, in the course of his remarks, said that "The American literature on the subject consisted mostly of general statements. Few writers had published cases, and the cases were mostly complicated ones."



There is some force in these words. But, to avoid a monotonous repetition, it is desirable only to publish such as are strongly illustrative of the class to which they belong, or such as bear directly upon any point which may be under discussion.

In the *AMERICAN JOURNAL OF OBSTETRICS* for January, 1883, Dr. P. J. Murphy, of Washington, D. C., makes some "Observations on the Effects of Trachelorrhaphy on Fertility and Parturition," and comes to the conclusion "That repair of lacerations of the cervix uteri is usually followed by sterility." Now, there is no doubt of the truth of this statement, so far as it goes, but I think he ought rather to have said that, in those cases in which sterility followed the operation, that condition also preceded the repair of the cervix in the majority of instances, either as a result of the laceration itself, or of its effects on the uterus and its appendages; and that the operation was not the cause of the sterility, but that it simply failed to cure it.

The only way to arrive at anything like a correct conclusion on this subject is to take a number of cases and analyze them, and this I purpose doing.

Of the twenty-seven cases in which I have made the operation, six were either widows, or had reached or passed the menopause, and must therefore be excluded from the analysis. This leaves twenty-one cases to be reported upon in this inquiry. Of these twenty-one cases, thirteen had been sterile from five to sixteen years previous to the operation, and, I think, for reasons which I will give farther on, that they ought also to be classed as beyond the probability of becoming pregnant. In the remaining eight cases, pregnancy had occurred within five years, but had resulted in abortion in five. In twelve of the twenty-one cases, from one to five abortions had occurred in each subsequently to the occurrence of the laceration. This gives abundant proof of the ill-effects of the lesion and its results, subinvolution, chronic hypertrophy, cellulitis, oöphoritis, etc., on fertility.

Is the assertion correct that sterility usually follows as a result of the operation? I do not think so, provided, of course, that the operation was properly made, that the os was not made too small, and that immediate union followed the coaptation of the parts, so that there was left the minimum amount of cicatricial tissue to interfere with the normal resiliency of the cervix.

The oftener abortion occurs, as a rule, the greater and more persistent will be the histological changes in the uterus and its appendages, which finally result in sterility.

The majority of cases in which the operation has been made have been of long standing, because the operation is new, and there were many old cases.

Is this last new remedy followed by any greater success than the old in the reduction of the size of a large uterine body, which has become hard and fibrous from connective tissue hyperplasia? I think not: and hence its failure to cure sterility of long standing.

from this cause. But, for the cure of certain cases of hypertrophy of the cervix, inflammation, ectropion and abrasion of the mucous membrane, with their local and remote symptoms, and possibly, even probably, preventing epithelioma, and in the more recent cases for the cure of subinvolution, abortion, and sterility, the operation is an immense stride in advance of the old way, because it restores the cervix instead of destroying it.

The following case proves, I think, that abortion may result from laceration of the cervix, although none of the usual inflammatory consequences of the lesion are present.

CASE I.—Mrs. M. L., æt. 30, consulted me in January, 1881. She was delivered of her first child two years previously. The labor was rapid, and the child fully developed. There was nothing unusual in the puerperal period, and she seemed to be well. Ten months after the birth of the first child she became again pregnant, but aborted between the second and third months of gestation. There was little pain, but severe hemorrhage. Within three months she was again pregnant, and aborted at about the same time and manner as previously. This was followed within six months afterwards (about two months before she consulted me) by a third pregnancy, and abortion under similar circumstances. She had absolutely no symptoms of uterine disease, and expressed herself as feeling as well as ever in her life. There was no evidence, whatever, of syphilitic infection, either in the patient herself or in her husband.

At the examination, all the parts were found normal except the cervix, which was lacerated on the left side to a point beyond the vaginal attachment, apparently involving the fibres of the internal os. On the right side, there was a mere fissure only. Believing the laceration to be the cause of the abortions, I advised an operation for the restoration of the torn cervix.

I operated on March 10th, 1881, removing very little tissue and freshening the edges as far up as possible. The latter were coated with six carbolized catgut sutures clamped with shot. The gut was used in preference to the silver wire because there would be but little tension—the cervix not being large and the tear chiefly unilateral—and to avoid cutting of the tissues which is more apt to occur with wire; besides, the line of union need not be disturbed by the removal of the stitches. On the seventh day after the operation, I inspected the cervix through Sims' speculum and found the sutures all *in situ*, though partially absorbed. Union was perfect. Two days later, the shot were lying loose in the vagina. There had been no discharge from the united surfaces since the operation.

On June 3d, the patient reported that she had not menstruated for seven weeks, and presented every indication of pregnancy. A week later, I was summoned and found she had aborted; but more pain attended and less hemorrhage followed the expulsion than on

previous occasions. This I ascribed to the restoration of the symmetry of the cervix, and its better retentive power.

On May 7th, 1882, the patient was delivered at term of a fully developed boy, after a normal labor of six hours' duration. Subsequent examination revealed not the slightest laceration of the cervix. Both mother and child are well.

CASE II.—Mrs. M. R., æt. 21, consulted me in May, 1878. She had been delivered eight months before of her first child, with the aid of the forceps. The puerperal period was prolonged; since then she had suffered from pain in the hypogastric and lumbar regions, together with profuse leucorrhea. Coition was painful and followed by slight hemorrhage. She was anemic and had lost flesh.

The perineum was slightly lacerated, the vagina relaxed. The cervix was pressing low down on the pelvic floor, and lacerated bilaterally, but to a greater degree on the left side. The tissues were soft from engorgement, and the cervical mucosa hypertrophied, everted, and abraded, bleeding at the slightest touch. The uterus was congested and tender, the sound entered nearly three inches.

Local and constitutional treatment for nearly a year was followed by marked general improvement, but the local condition was only temporarily benefited. April 30th, 1879, I operated on the lacerated cervix, placing seven silver sutures. Perfect union resulted.

Three months after the operation she became pregnant, and was delivered spontaneously at full term. The labor was so easy that delivery occurred before the arrival of the physician. Two months after the labor, I found the cervix healthy, although there was a very slight fissure on the left side. She stated that she had been well since the operation.

CASE III.—Mrs. A. B., æt. 34 years, had had eight children, the youngest of which was six months old. She stated that she always menstruated during lactation, and became pregnant when her children were about eight months old. Since the birth of the last child, she had had metrorrhagia every three weeks, lasting one week, and a profuse leucorrhea for years. She complained of pain in the lumbar region, with a heavy dragging sensation in the pelvis and on the top of the head. She was emaciated, and so pale that she appeared bloodless. She had become hysterical.

The perineum and vagina were very much relaxed. The cervix uteri was far back, and presented a nodular surface, the results of three deep rents, one of them extending through the centre of the anterior lip, flush with the vaginal junction. There was marked ectropion of the mucous membrane, with abrasion. The body of the uterus was anteverted, and only slightly larger than normal.

I placed this patient upon the "rest treatment" of Dr. S. Weir Mitchell, in addition to the necessary local treatment. Her improvement was very marked, and on October 10th, 1880, three months after she first came under my care, I operated for the laceration, and secured immediate union.



A year from the date of the operation, I find this note in my case-book: "She has improved so much in appearance that I scarcely knew her, and she states that she has been well since a short time after the operation. The cervix is perfectly normal, and gives no evidence that an operation has been made."

I recently received from my friend, Dr. Wm. L. Taylor, the following note concerning this lady:

"DEAR DOCTOR:—In answer to your inquiry regarding Mrs. B., I will state that she was confined six weeks ago. The labor was natural, and if it differed in any way from her former labors, it was more rapid. I examined the cervix to-day, and found the external os patulous, but no laceration."

CASE IV.—Mrs. X., æt. 35, had had seven children and two abortions, the last one nine months before. She complained of pain in the lumbar region, a heavy dragging pain in the pelvis and very difficult and painful locomotion. These symptoms had been growing in severity for several years; she also had menorrhagia and leucorrhea.

Cervix large, soft, and lacerated bilaterally flush with the vagina. Mucous membrane engorged, everted, and eroded. Uterus retroverted but mobile. The sound passed three and a half inches.

On February 27th, 1881, I closed the rent, placing seven sutures: union immediate. The result on the symptoms was all that could be desired. A letter received a few days ago, in answer to one of inquiry from me, informed me that this lady is now pregnant.

Here are four cases in which pregnancy followed the operation, out of the class of eight in which impregnation had occurred within five years previous to the restoration of the cervix. That there will be more I feel sure, because a sufficient time has not yet elapsed since the operation was made, in some of my cases, to prove that sterility will continue.

Does not this analysis prove that sterility does not result as a consequence of the operation, when the proper precautions are taken to secure immediate union and a normal-sized os? That it will prevent a recurrence of abortion and cure sterility of recent date, Cases I. and II. give undoubted evidence. That it will fail to cure sterility of long standing, for reasons given in this paper, I am convinced from my own experience. Time, however, may prove that a small percentage of this class will also be benefited in this direction.

I have selected the following cases from the class of thirteen in which sterility had existed more than five years prior to the operation, as strongly typical of the point I wish to illustrate, viz., that the longer the time which has elapsed between the occurrence of the injury and its repair (pregnancy being absent during this time), the greater and more permanent will be the changes in and about the uterus, which almost necessarily results in a continuance of the sterility after the cervix has been restored.

CASE V.—Mrs. M. R., æt. thirty-nine, consulted me in the fall of

1880. She had had six children, the last one thirteen years before. Her labors were all normal, so far as she knew, except the last. This was complicated by a malposition. The forceps were applied two hours before the delivery of the head, and great traction effort was necessary. The child was so injured by the forceps that it died on the third day after delivery. The patient was unable to be out of her bed for nearly three months afterward, and the bloody lochia continued during two months. She had suffered from menorrhagia ever since, and recently from metrorrhagia every two weeks, at times amounting to "almost a flooding." In the interval she had a constant and profuse mucous leucorrhea. She complained of a deep-seated pain in the pelvis, "sawing" in character, with pain in the sacral and lumbar regions and across the shoulders. Coition could not be tolerated because of the pain and the hemorrhage.

The perineum showed an old laceration of slight extent, and within an inch of the vaginal orifice the finger came up on a large mass of tissue which filled and distended the tube. It was hard and nodular around its border, but softer and rather friable in its centre; and it bled on the slightest touch. It gave me, at first, an impression of epithelioma, and I could readily detect that the cervix was bilaterally lacerated down to the vaginal attachment. The body of the uterus was hypertrophied, indurated, retroverted, and slightly fixed from contraction of the broad ligaments. Through the speculum the cervix was seen to be lacerated, and the softer tissue, which occupied the space between the separated lips, proved to be redundant mucous membrane, which seemed to have united from side to side, leaving a very small opening in the centre, corresponding to the external os. This tissue was dotted all over its surface with Nabothian cysts. The sound passed to the depth of minus four inches, and showed the uterine cavity to be rugous—vegetations of the endometrium. I now punctured the retention cysts, and found that the redundant tissues between the torn and separated lips was riddled with them. So much hemorrhage resulted from the scarification that, to check it, I was finally compelled to tampon the vagina. On the next day I removed the tampon, and found the mucous membrane much reduced and less congested.

I treated this lady during a number of months for the purpose of relieving symptoms, and preparing the parts for an operation on the cervix. The hypertrophy and congestion of the mucous membrane of the cervix and uterine cavity were considerably reduced, the metrorrhagia and leucorrhea diminished. The uterus became more mobile, and tenderness subsided; but the parenchyma of the cervix and body of the uterus remained sclerotic and unreduced in size.

On February 10th, 1881, I closed the rent, after dissecting away a large amount of cicatricial tissue from the sides and angles. I placed eleven silver sutures. Considerable difficulty was experi-

enced in passing the needles through the dense and tough cervix, and I broke and bent several before I succeeded in placing all the stitches. The surfaces did not unite as readily in this instance as is desirable, but union was finally established by granulation, resulting in the formation of a good cervix.

This patient has been entirely relieved of the leucorrhea and pain of which she complained, but she still has an occasional menorrhagia, and the body of the uterus remains large and hard, the sound entering three and a half inches. As was to be expected under these circumstances, she has remained sterile, but certainly not as a result of the operation.

Dr. Murphy further says: "I fear I shall never arrive at that perfection where it will be given me to appreciate why a laceration of the cervix, by being repaired, will probably prevent cancer of the womb."

I do not wish to discuss this subject here, as I am preparing a special paper upon it, but I would like to say that, if we believe that cancer may develop in consequence of the changes in the circulation and nutrition, which necessarily follow when the cervix is torn—and it seems to me one need not have arrived at perfection in the art of appreciation to believe that cancer might develop in a field such as was presented in case IV. previous to the operation—then restoration of the organ ought to prevent cancer.

He also concludes "that the character of the labor is unusually severe and protracted, and that, in a large percentage, laceration occurs a second time."

That this statement is too sweeping is abundantly proven by the cases I here record. I can believe, where pregnancy has happily followed the operation in a case of long standing, in which the cervix is sclerotic from connective-tissue hyperplasia, and cicatricial from non-occurrence of immediate union, that the first stage of labor might be tedious, and that relaceration might take place. But, suppose that relaceration does occur in some cases, is that sufficient reason to deprive the patient of the benefits which usually accrue from the operation, independent of pregnancy?

Not long ago I made the operation for the restoration of a lacerated perineum, which extended fully an inch and a half up the recto-vaginal septum, on the person of a lady fifty-one years of age. The laceration occurred twenty-six years before with a severe forceps labor. She had been debarred from the society of her friends, and made loathsome to her husband as well as to herself all these best years of her life. In answer to my inquiry why she had not sought relief long before, she replied that she had done so, but that she had been advised to wait until after the menopause for fear that, in the event of another parturition, the parts would relacerate! Comment on such argument as that is unnecessary.

The comfort which this lady has enjoyed since the rectum and perineum have been restored causes her to feel far from kindly towards the gentlemen who advised such conservatism.



I have recently delivered two ladies on whom the operation for lacerated perineum was made about three years ago, one by Dr. Goodell and the other by myself. Relaceration did not occur in either.

DR. GITHENS stated that on June 18th, 1878, Dr. A. H. Smith had operated upon Mrs. M. for the restoration of a lacerated cervix, and on July 10th of the same year had performed perineorrhaphy, both operations proving successful. On June 19th, 1879, a year and a day after the first operation, I delivered her of a boy at full term, the labor being uncomplicated and easy, and no tear of either cervix or perineum occurring.

DR. E. E. MONTGOMERY remarked that, as regards the question of sterility resulting as a consequence of the restoration of a lacerated cervix, he had been operating since 1879, and five of the patients he had operated upon have since become pregnant. The first patient upon whom he operated became pregnant lately, but aborted; as she had desired not to become pregnant and was anxious that an abortion should occur, he believed that it had been artificially induced. Another patient, operated upon in 1880, had been delivered in January, 1883, without accident. A patient operated upon in 1879 is now four months advanced in pregnancy; before the operation she had aborted at three months; this accident was apparently consequent on the existence of the laceration. Of these five cases, two were lacerations of long standing and three were recent.

DR. CLEEMANN had operated upon one case of nine years' standing. During the first two years of that time she had two miscarriages, and then remained sterile for seven years. The operation was performed eleven months ago, and she is now two months advanced in pregnancy.

DR. A. H. SMITH had heard Dr. Baer's paper with pleasure. The general impression in this city is that sterility is a consequence of the injury, and a large proportion of the cases operated on by him have soon become pregnant after operation. The fear of the recurrence of the accident prevents pregnancy in many cases, as means are used to avoid that condition. Improved general health and local comfort are a result in a majority of the cases, even where pregnancy does not occur.

He would like to hear Dr. Baer's experience about the existence of obstinate nausea in pregnancies after operations upon long-standing cases, accompanied with an enlarged and hardened condition of the cervix. It has been so with him. As regards the results of labor, there has been no tendency to relaceration in the same position. He uses inhalations of chloroform and hot-water douches in such cases, and does not rupture the membranes early; he also prevents the patient from bearing down, and by these means secures a slow and safe labor. He is sorry to hear that Dr. Baer has no confidence in the power of the operation to reduce the size of a hyperplastic uterus. He has seen cases of the so-called subinvolved uterus, after the complete failure of local means, such as iodine, silver nitrate, etc., reduced to one-third of its bulk by operating upon a laceration of the cervix. The rapidity with which the ultimate result of reduction in size is reached is in proportion to the time that has elapsed since the injury.

When the cervix is much hypertrophied and ectropium exists, such a cervix as would formerly have been called cancerous and

would have been amputated, the stitches should be left in a long time. If they are removed too soon there is a proneness to gaping, a sort of ectropium or sprouting. This will not happen if the sutures are allowed to remain thirty to forty days.

DR. WILLIAM GOODELL regrets that he was too late to hear Dr. Baer's paper. With reference to the question of the influence of the operation on causing sterility, he thinks it does have such an influence. He has operated in one hundred and sixty-nine cases, and has only known of seven who have since become pregnant. There were probably more, as the cases have passed away from his knowledge and he has never heard of them again, as he does not practise obstetrics outside of the Preston Retreat. In two of the seven cases, a second operation was required, but it was slight. In one case, not the slightest change occurred in the form of the os. As regards the effect of the operation in preventing cancer, he believes it fully, both from experience and from *a priori* reasoning. He has seen but two cases of epithelial cancer in women who have not borne children. In fact, his experience has been that the greater the number of children the greater the liability to carcinomatous degeneration, and often the notch of a previous laceration is seen in the cancer. If carcinoma is, as we believe, a local disease at its beginning, what more probable cause could we have than such an irritating sore as a bad laceration of the cervix? In more than one case his principal reason for operating for the restoration of the cervix has been on account of a history of cancer in the family.

Concerning the effect of the operation upon hyperplasia, he believes with both Dr. Smith and Dr. Baer. There is an element of passive congestion, the result of the irritation of the laceration, and when the cause is removed by the operation, the effect passes away and a great reduction in the size and weight of the uterus is secured. He believes that preliminary treatment in cases of enlargement with ectropium has a very great effect upon the results of the operation. Applications of iodine, glycerin, and tannin, and the use of the very hot douche, and cross-hatching of the enlarged Nabothian glands, have a softening and calming effect. In such cases, if the hard, gristly triangle in the apex of the wound be carefully excised, the tension on the stitches is slight. He generally removes the sutures in about nine days after the operation; in one case, in consequence of circumstances affecting convenience, they were allowed to remain three weeks. When he can secure easy approximation and close coaptation, which is readily done by means of his guiding thread, perfect union is more probable than in any other plastic operation. For his sutures he uses the finest possible silver wire; it is drawn to order.

As regards the results of the operation on various symptoms that were supposed to arise from the presence of the injury, he has experienced the greatest success and great disappointments. In some local treatment would have answered every purpose. The most expensive present he ever received from a patient was from one on whom he had performed this operation and relieved, by it, a morbid mental condition that had lasted for years, with great local distress, and inability to walk any distance or to stoop over as in packing a trunk.

DR. A. H. SMITH knew well the value of preliminary treatment and employs it faithfully, but there is a limit to the endurance of a patient, she cannot be kept too long upon her back and it sometimes becomes necessary to operate before all that is possible has

been accomplished. In some cases there is an unavoidable tension and in others a friable condition of the tissue which is benefited by leaving the stitches in position. He allows the patient to attend to her domestic duties with the sutures *in situ*. In his experience there has been no relation between the number of children and the tendency to carcinomatous degeneration. Such growths have been in women who have had but one or two children only. Cancer of the mammary gland is most common in sterile women or when children have been few. He has rarely seen cancer in its early stages in an enlarged cervix with ectropium, but on the contrary in unnaturally small cervixes.

DR. WHARTON SINKLER has three patients who have been operated upon for lacerated cervix, one of them by Dr. Goodell. All of them have since become pregnant.

DR. MONTGOMERY remarked that one-sixth of the cases he had operated upon (within four years) had since become pregnant. He thinks Dr. Smith's suggestion an over true one, as the injury was the result of pregnancy the risk must not be run again. In the Philadelphia Hospital he has found cancer of the uterus most common after numerous labors. The same rule has held good in mammary cancer. It has been most common after frequent nursing. Uterine hyperplasia is reduced by operating on the torn cervix. He has operated with this result in view in cases of so-called subinvolution.

DR. H. BEATES has performed twenty-three operations and has had two pregnancies since. He has had under his care seven cases of uterine carcinoma and in all of them cervical laceration co-existed. The number of children varied from one to several.

DR. BAER, in closing the discussion, remarked that in answer to a letter of inquiry to the husband of a patient upon whom he had operated to restore the cervix he received one in return in which the idea of another pregnancy was scouted with disdain. He had not observed that more nausea was present in pregnancies following the operation, but he had not had a case of long standing in which pregnancy had occurred as yet.

He thought Dr. Smith agreed with him fully regarding reduction in size of an old hyperplastic uterus whose muscular element has been replaced by connective tissue when he says that "the rapidity with which the ultimate result of reduction in size is reached is in proportion to the time that has elapsed since the injury." That is exactly the position Dr. Baer took in his paper, but he believes the change in the parenchyma of a connective tissue uterus to be exceedingly slow, if at all. The reduction in size occurs in the mucous membrane and the tissues immediately under it and in the cellular tissue around the organ.

Sutures were removed in from eight to twelve days; he thought they ought to be removed as soon as union was solid, because he believed that they had an irritant action after that time. If that action is desired, then they might remain, but that was returning to the old idea of the seton, and to a certain extent the operation then ceased to be a plastic one.



## TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON, D. C.

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*Stated Meeting, held Nov. 17th, 1882.*

DR. S. C. BUSEY, *President, in the Chair.*

DR. JOS. TABER JOHNSON read a long and interesting paper, giving a successful case of

### BATTEY'S OPERATION,

occurring in his practice last August.

The case presents the following history: The case was first seen by Dr. Johnson, in consultation with Dr. J. R. Riley, in June, 1882. Miss M. was an unmarried lady, 29 years of age, and gave a history of ovarian pain and convulsions reaching back to date of puberty. She had been under the care of many physicians in Pennsylvania, her home, but had never been relieved. She was constantly growing worse, and had become a great burden to herself and friends. Her mental faculties had lost their vigor, and she presented a facial appearance much resembling a confirmed epileptic. Her constant pain, increasing at menstrual periods into agony, finally culminating in spasms, during the days of the flow, had destroyed all pleasure in living, and she looked forward to an early death as her only relief. Her pain and eclampsia were aggravated by an unrelieved menstrual molimen. For several months last year she had no flow, and during that time grew rapidly worse.

Her pain was only controlled by large doses of morphia, chloral, or alcohol. Life was unendurable without these remedies, and they obtained for her but temporary comfort.

After a careful examination, Dr. Johnson expressed the opinion that the only hope of cure was in the removal of the ovaries, and he fully explained the dangers attending the operation. Miss M. desired to have the operation performed at once, if it presented even a ray of hope. She much preferred to die than to live on in the pain she was enduring. Life had no charms for her. The price she was compelled to pay for its continuance robbed death of all its horrors; indeed, she welcomed its approach as the only means of escape from a condition worse than death to her. After various consultations with physicians, friends, and relatives, it was finally determined to operate, and on the 17th of August, 1882, Dr. Johnson removed both ovaries and one Fallopian tube by the abdominal section, the patient being in a private room in the Providence Hospital, of which institution Dr. J. is gynecologist. The patient made a good recovery, and has since been well. She has had no sign

of menstrual flow, and scarcely a sign of convulsions since leaving the hospital. Has had a number of momentary attacks, without becoming unconscious or falling. She is now cheerful, happy, very grateful, and a useful member of the household—caring for others, instead of, as heretofore, being constantly cared for.

The President requested Dr. King to open the discussion.

DR. KING said that he felt certain he did not know as much on the subject under discussion as Dr. Johnson, who deserved to be specially complimented for the manner in which he had handled his subject, and for the skill with which he had performed the operation, the operation being the first of the kind in this District, and at the same time successful. He had no personal experience with the operation, and hence had but little to say; in fact, after the careful, elaborate paper just read, there was very little left to be said. In a curious book by Dr. Bulwer, published in 1623, the castration of women was treated of, although the question was not handled from a scientific stand-point, and it was doubtful whether the cases reported were reliable. One of the cases given was amusing. A man had castrated a woman and was brought to trial for it. The justices were greatly troubled about it, because there was no law against castration of women, although there was one against castration of males. They finally solved the difficulty by hanging him for stealing apples from the woman. The old historians told us that the king of Lydia kept castrated women. Female castration was also referred to by Hesychius, Athenæus, Aristotle, Suidas, Galen, and others. All this seemed to show that the spaying of women was not a modern practice, but Battey's operation was novel in this, that it was undertaken for beneficent and curative purposes. Battey, in his paper read before the International Congress in London in 1881, had collected all the cases from 1872 to 1881, given by different operators, 218 in all, of which, however, 25 were "incomplete" operations. Of the total 218, there were 26 in which the element of epilepsy (either with or without other abnormalities) was present. Of these 26 epileptic cases, over two-thirds are said to have been relieved by the operation, the record being as follows: Died, 4; cured, 14; improved, 4; not improved, 2; not cured, 1; not stated, 1. The mortality of the whole 218 cases contained in Battey's list (of which 10 were his own operations), was 18 per cent. Dr. King said he could not criticise either the operation or Dr. Johnson's case; the result showed that the doctor had done well. At the same time the necessity for such an operation was a sad commentary on the boasted scientific knowledge of the age, an age so full of advances in pathology, hygiene, therapeutics, *materia medica*, etc., inasmuch as we had to come to it at last, and conclude that with all our knowledge nothing remained but to castrate. It seemed that so far we had failed to understand the causes, pathology, therapeutics, and hygiene of these troubles, so that nothing was left but surgical interference. And, above all, it was an operation not confined to the old, but practised upon young women between twenty and thirty, and upon some even in their teens. They were unsexed so far as reproduction was concerned, and rendered barren for life. True, some of the patients in the incomplete cases had afterwards married and borne children. The great danger lay in this, that the successes might cause it to be a hobby ridden too much, a thing that happened when the Cesarean operation first became popular in France; then the operation was said to have become as common as blood-letting. The

danger in Battey's operation was the temptation held out to relieve the symptoms at once by the brilliant operation of oöphorectomy, and we might easily go to extremes in this matter. Take cases of epilepsy; was it frequent to spay men for this trouble? Yet we know that many cases depended upon sexual excitations, and we know that this could often be kept down by long-continued and large doses of bromide of potassium. He thought the treatment ought to be urged, that the bromide should at least be kept up for years, just as we did in male patients, before resorting to castration. The question had occurred to him whether ligation of the uterine and spermatic arteries would not be equally effective. Still, there was, perhaps, danger in ligatures, and besides this, the collateral circulation might be re-established. The idea was not new with him. Simpson had proposed ligation of the ovary, although Dr. King did not quite understand whether he meant ligation in bulk or of the vessels. Bartlett had successfully ligated the ovaries and cured his patient. As to myoma being an indication for the operation, he did not think that it was set down that mere development or rapid growth of such a tumor was an indication, unless there was dangerous hemorrhage. As to Battey's report, showing all the cases he could collect, it was but natural that a man with a new operation would look upon the bright side of the subject. Then, again, all the cases had occurred within the last ten years.

What would these women be in twenty years? For while it was true that the operation had led to no special results in animals, yet we could not tell what would finally happen in women.

DR. KLEINSCHMIDT said it had been his privilege to be present at the operation, and he had also the opportunity of seeing the patient since, having visited her on yesterday with Dr. Johnson. The change in her facial expression since the operation was remarkable, and he certainly would not have known the woman, although he had looked right in her face during the operation. Her face had lost the low, almost brutish, expression which was so striking when he first saw her upon the operating-table; and when she entered the room yesterday she wore a pleasant smile and appeared very cheerful. Upon inquiry she informed him that all her former severe attacks had left her; that she had slight attacks, lasting a minute or so, at the time of her former menstrual discharges, and that the last but one menstrual period had passed off without any attack. She could now take care of herself, and was not obliged to have some one constantly watching her. Dr. K. said that while, as regarding a perfect relief from these nervous attacks, the operation might perhaps not be called a complete success, yet it certainly was successful in this: that it had converted severe epileptiform seizures, most of them lasting for four or six hours at a time, during which it required several persons to hold her, into attacks of what our French brethren called *petit mal*, passing off in a few minutes or even seconds, and consisting simply in a temporary loss of consciousness.

DR. KING would add to what he had said, that, almost immediately after Dr. Battey had read his paper before the International Congress, Dr. Grailey Hewitt read a paper on cases of hysteropilepsy due to flexions of the uterus, which were cured by the use of an appropriate pessary.

DR. BUSEY inquired, How would the operation do in vaginismus?

DR. ASHFORD had not heard Dr. Johnson's paper read. He was, however, present at the operation, and was struck with the brilliant and successful manner in which it was done. He did not at



that time consider that it was a fair test in the case under discussion, and thought that, had it failed altogether in relieving the nervous symptoms, it would have been no proof against the propriety of operating in these cases. Although he advised it in this case, he yet had doubts as to its success, because it looked to him that the brain was seriously affected, and hence he could not see how success could be looked for. Still, it was one of those rare cases where patient, friends, and medical attendants all were anxious to have something done for her relief, so that almost any procedure looking to that end was justified, after failure of all ordinary means. Practically he knew nothing of the operation, and very little of its bibliography, but he thought that Dr. King's remarks as to the danger of its becoming too popular were pertinent. Thus he had noticed, in looking over the journals, that during the last year or two the indications for which the operation was advised had greatly increased in number. At first the indications were laid down in narrow limits; now the limits were becoming much more extensive, whether from the results obtained or from mere speculations. The history of the operation itself certainly did not give a wide range of indications for it. It appeared less indicated in hystero-epilepsy than in uterine growths, where the induction of the menopause was a good reason for its performance, as shown by the results obtained, for the growths had ceased to enlarge, even if they had not become actually reduced. He held that the indications were stronger in epilepsy induced by ovulation than in cases where the attacks of epilepsy occurred more frequently. It was also indicated in cases of absence of the uterus and atresia vaginæ, where the appearance of the menses caused serious trouble. In some cases of his own he had had the operation in mind in order to relieve the hemorrhage due to uterine fibroids, and had advised the patient to have it done. In one of these cases he forgot that he had first advised against it, and she was now in charge of Dr. J. T. Johnson. He did not know whether the doctor had relieved her by treatment. The great good of Dr. Johnson's paper was that it set us all to thinking over the operation, and the probable and possible indications for it.

DR. LOUIS MACKALL (by request) said that he had listened to and learned a great deal that was interesting from the paper, and expressed his thanks to the author for it. He felt that he was unable to add anything to the subject. No doubt the operation would prove a boon to humanity; still it was a question in his mind whether all the diseased conditions for which the operation was undertaken were likely to be benefited by its performance. Hystero-epilepsy, as we knew, did not have its seat in the ovaries; the condition of the latter simply furnished the exciting causes for the attacks. The real trouble lay in the condition of the nervous system, which in some of its parts was in an unstable molecular state. He would also remind us, that we again and again met with cases of epilepsy where the seizures occurred day after day, and in greater and greater severity, until finally the intellect was all but destroyed, when the patients had a brutish look, and when all therapeutic means had been exhausted in vain. Such a patient would perhaps be sent West to some quack, and by and by we would hear that under the care of this man he was greatly improved, that this improvement lasted for months, until finally he returned looking well, and showing by his actions that he was in all respects vastly improved. This apparent recovery would go on for a time, and then, gradually, the man would fall back to his

former condition. Then, very likely, another quack would be tried and again improvement would take place. All of us, no doubt, knew of such cases and were surprised at the results. It was necessary, therefore, to wait some time before we could finally decide upon the success of this operation in any given case. It might be that by the removal of the ovaries a certain beneficial impression might be made upon the central nervous system, something similar to what we saw in some cases of trephining for epilepsy, where good results followed, even though no evidence of pressure on the brain was found. These remarks, however, he did not intend as a reflection upon the operation. There was one class of cases, not referred to, in which he deemed the operation perfectly justifiable, viz.: a displaced ovary which caused intense suffering when bound down in Douglas' fossa. Here, as a rule, only one ovary need be removed and by way of the vagina. There was one statement made by the doctor in regard to the vaginal operation, that it was less dangerous than the abdominal section. He had seen in a recent medical journal statements of a contrary character.

DR. ASHFORD said that it was claimed that the results obtained by the vaginal method were not as good, but that the operation itself was less fatal than the abdominal section.

DR. J. T. JOHNSON.—The mortality as given was 17 per cent for the vaginal, and 24 per cent for the abdominal operation.

DR. ASHFORD drew attention to the condition of the ovaries in Dr. Johnson's case. In some cases they were normal, hence the name of "normal ovariectomy" given to the operation; but in most of the cases there was a diseased condition, and in these the success of the operation had been greatest; in other words, the disease here depended upon the abnormal condition of the ovaries.

DR. W. W. JOHNSTON stated, as a curious coincidence, that there were now in this room specimens of the first ovariectomy performed in Washington, by Dr. May, and of the first oöphorectomy performed here. In Dr. May's case the operation was easy and the patient recovered. The case had never been published.

DR. MACKALL inquired whether there were not among the cases reported some of displaced ovaries?

DR. J. T. JOHNSON, in reply, stated that the operation had been done for the relief of that condition, and the suggestion was made to remove them by the less dangerous vaginal route. We could feel the organ in Douglas' fossa and easily cut down upon it, while, if we attempted to reach it by laparotomy, we would be obliged to hunt for it in the pelvic fossa, and the adhesions might render the operation a very bloody one. In hernia of the ovary, the removal was also easy. In closing the discussion, he said he was indebted to the Society for the kind remarks made. He would never have undertaken the operation had he not had the encouraging advice of his friends, all of whom urged it. He also must thank his assistants at the operation itself. It was said that no one knew, in a case of this kind, what he would find upon opening the abdominal cavity; in his own case, fortunately, everything was easy, so much so that he was almost afraid it might turn his own head. When in his paper he had spoken of the difficulties of the operation as pointed out by Spencer Wells and others, he had no idea of lauding his own good fortune and success. For in his case all was perfectly plain sailing. The name "normal ovariectomy" would not apply here, for there were cysts in the ovaries, the broad ligaments, and the Fallopian tube. Some of these, in time, might have enlarged and finally produced a large

tumor. His patient had suffered for sixteen years. But even if it had only been known that these cysts existed the operation would have been justifiable.

## REVIEWS.

ON OVARIAN AND UTERINE TUMORS, THEIR DIAGNOSIS AND TREATMENT. By T. SPENCER WELLS. With numerous illustrations. Philadelphia: P. Blakiston, Son & Co., 1882. Pp. 530.

Under this title Mr. Wells has reproduced the work which appeared under the title of "Diseases of the Ovaries" in 1872, in larger form and, evidently, to a large extent, re-written; but it is very difficult to say that it is in any way improved. In 1872, Mr. Wells had performed five hundred ovariectomies or, at least, operations which he designated under that name, and, as far as his book of that date is concerned, the ovaries seemed to be affected by no disease of any kind, beyond their growth into tumors. In 1882 he publishes a list of one thousand operations, and seems to have made little or no advance in ovarian pathology. With this enormous and wholly unprecedented experience he seems to have been unable to add anything, either to the pathology or surgery of the important glands with which he deals. It is not surprising, therefore, that he altogether disregards the most recent advances in this direction which have been made since Keith showed us that Mr. Wells had really led us astray from the true methods of dealing with ovarian tumors. Even with such advances as he does touch, he deals so slightly as to make them seem of scant importance; and all this is not excused by the change of title of the book, for, though it is technically re-written, it is practically the book of 1872.

It is true that the account of the anatomy and physiology of the female organs, which formerly occupied twenty-four pages, is now limited to seven; but this is a great gain, since the views enumerated are those prevalent some thirty years ago, which are now either disputed or entirely discarded. An example of this is to be found on page 3, where it is stated that the *corpus luteum*, "which results from the exit of an ovum which does not become impregnated, is less marked in its characteristics, and is said to be a false *corpus luteum*."

Another example of the same method of writing is to be found on pages 8 and 9, where a division is gravely proposed between "cysts of broad ligament or vesicles of the Wolffian body," and "cysts developed from tubules of parovarium." We presume that, by "vesicles," Mr. Wells here means the club-shaped extremities of the tubules. But how it would be possible to discriminate in any way, anatomically, pathologically or surgically, between a cyst that had arisen from a structure representing the vesicle only, another representing the tubule only, and another that represents both, it is difficult to imagine. Again, at page 13, we are told that "simple extra-ovarian tumors found upon the broad ligament are, commonly, cysts arising from the tubules of the parovarium, or



expansions of the terminal bulbs of the Wolffian organ. These vesicular bodies which are seen pendent near the fimbriated end of the Fallopian tube, etc." These vesicular bodies have nothing whatever to do with the Wolffian *body*, but are the remains of the Wolffian *duct*, from which the Fallopian tube is formed, so that Mr. Wells has here introduced unnecessary confusion. At the same place will be seen an example of the disregard paid by Mr. Wells to the work of his successors. He speaks of "simple or unilocular ovarian cysts," though, since Bantock pointed out that the so-called unilocular ovarian cysts were really cysts of the parovarium, no such thing as a unilocular ovarian cyst has been shown, and the most modern authorities entirely deny its existence. Of course it is quite impossible to believe that Mr. Wells can be ignorant of the views expressed by one of his colleagues, or of the complete substantiation they have everywhere received. It is, therefore, wholly inexcusable, in such a work as this, to find one of the leading features of a parovarian cyst given as a character of an ovarian cyst, as is done on page 11. "Generally the Fallopian tube, enlarged and elongated, stretches over the surface of the tumor and sometimes seems almost identified with its substance, the fimbriated extremities being spread out and more or less attached. In other instances the overgrown tube passes freely along the walls of the cyst in a fold of peritoneum." With an ovarian tumor the tube never has any such relation, whilst with most parovarian cysts it has it, more or less. At page 15 this point is accurately described by Dr. Wilson Fox, concerning one of Mr. Wells' own specimens, removed as early as 1862, yet Mr. Wells seems to have neglected the opportunity for an important discovery, subsequently made by Dr. Bantock. A still more marvellous thing is that, in his table of operations, Mr. Wells makes no discrimination between parovarian and ovarian tumors, but heads the list with the words, "Table of One Thousand Cases of Completed Ovariectomy." As it has been shown that the parovarian cysts constitute about ten per cent of the tumors removed, it follows either that Mr. Wells has not yet performed a thousand ovariectomies, or he has done about a hundred operations for parovarian tumors, of which he tells us nothing.

As an illustration of this subject, there is introduced a woodcut on page 14. This illustration appeared at page 30 of the volume of 1872, and certainly has not been recut. It, therefore, has a second-hand look which is, by no means, creditable to the liberality of the publishers; and this is the character of most of the illustrations of the book. This particular woodcut shows two terminal bulbs to one Wolffian duct, both in the wrong place—a series of phenomena not yet placed on record by any other authority.

Concerning the pathology of "multiple ovarian cysts," Mr. Wells satisfies himself with reproducing the sentences and woodcuts of 1872, with a meagre exception in favor of Mr. Doran, the meaning of whose illustration, it seems to us, Mr. Wells entirely misunderstands.

Concerning dermoid tumors, Mr. Wells is quite as much behind the day; for he says not one word about the theory of their parthenogenetic origin, first suggested by his own assistant, Dr. Ritchie, and since almost completely substantiated by others. The interesting feature of the axial rotation of tumors he passes over, without any allusion to recent explanations offered and widely accepted for it. In fact, the first part of the book is so wholly unsatisfactory that we may pass it by with the remark that, with all

his experience as a surgeon, Mr. Spencer Wells has done little or nothing as a pathologist. We may pass, therefore, to the practical part of this book, with the expectation that, there, the outcome of this great experience will be found.

The second chapter, headed "Diagnosis and Differential Diagnosis," occupies about eighty pages, against one hundred and twenty in the previous volume. There has always seemed to us a marked want of method in the arrangement of the matter of Mr. Wells' books, and this defect is here reproduced; as there is a somewhat bewildering mixture of clinical information with pathological and surgical detail. This confusion, associated with the absence of anything which serves as a real index of reference, greatly diminishes the value of the work, as it is a matter of difficulty to find a sentence on some particular point which may be required in a hurry.

The illustrations in this chapter are, with very slight change, those of the previous work, and might have been omitted without the slightest detriment to the volume. The detailed information of the chapter is, in the main, of great value, as the mere extent of the experience possessed by Mr. Wells must, of necessity, make it. But here again he shows an indisposition to move with the times, which detracts very much from his own position, from the value of his work, and from the weight of his teaching. Thus, amongst the opening sentences of the chapter is a statement that there must be made out, if possible, "the basic origin of the tumor, and what sort of pedicle it has, on which side it is attached, and whether it be single or double." On the solution of such questions "depends the decision whether tapping should or should not be recommended, whether drainage should be tried, or whether ovariectomy would be the best practice."

The experience of Keith, Tait, Savage, and others, has demonstrated, as clearly as anything can be established in surgery, that neither the nature of the pedicle, its position, nor the presence of adhesions, makes the least difference in the propriety of removing an ovarian tumor, nor in the prospects of the success of the operation. Therefore, the points of diagnosis indicated in these sentences are quite needless, even if they were possible, which they are not. In the discussion of the signs of diagnosis of adhesions, Mr. Wells falls into a very curious and common blunder. He says, "If the cyst be really free no crepitus will be felt," whereas, it is only when there are two free surfaces, somewhat dry, rubbing on one another, that this sign is present. When adhesion has occurred, there can be no crepitus. Seriously, to propose tapping or drainage in a tumor which can be removed, now that the mortality has been brought down by Keith and Tait to four or five per cent, is to go back to the middle ages of abdominal surgery. It is now the established result of the most extensive experience that the removal of ovarian tumors in this early stage has hardly any percentage of fatality about it, the deaths occurring, almost entirely, in the cases where delay and tapping have been recommended and unfortunately practised. It was natural enough for Mr. Wells to advise this kind of treatment when his mortality stood, as it did for nearly twenty years, at twenty-five per cent; but such a practice is no longer defensible. Even in parovarian cysts tapping is no longer allowable, in spite of the fractional chance of cure by it, which Mr. Wells still adheres to. The cases where inflammation and suppuration of the cyst occurs after it is tapped are far more frequent than the cures by tapping.

In the diagnosis of parovarian cysts from those of the ovary, Mr. Wells still adheres to the test of Scherer, the peculiar reaction of acetic acid on the coagulum produced in the fluid by boiling. But, later researches have shown that no chemical means exists, nor does any microscopic appearance, by which a discrimination can be made between the fluid of ascites, of a parovarian cyst, or of an ovarian tumor. The spectroscopic investigations of McMunn dismiss our last hope that any trustworthy aid will ever be obtained, and, fortunately, it is a matter of very little practical consequence. There is no need, therefore, to follow Mr. Wells in his somewhat protracted discussion of the contents of ovarian cysts, especially as he ignores entirely what some very diligent workers have said upon the subject.

The few pages devoted to tympanites and phantom tumors are most especially disappointing; for here, with the enormous field of experience which, for more than a quarter of a century, has been at Mr. Wells' disposal, we surely have reason to expect some addition to our knowledge. But there is not the slightest attempt to discuss the pathology of these most interesting conditions, nothing but the reproduction of old woodcuts.

One of the most unsatisfactory parts of the book is that in which is discussed the diagnosis of pregnancy. When he tells us that "the diagnosis between one incipient ovarian cyst and pregnancy at an early period is really of no practical importance," we are inclined to doubt if he is serious. In our own experience, this point has been so frequently one of importance, and one of such difficulty, that we are bound to express complete disagreement with the opinion of Mr. Wells, and it certainly is not in accordance with any desire for the advancement of our art that a patient should merely be told to wait for "the cumulative proofs and the decisive denouement." In cases where the first indication of the presence of a tumor is the increase noticed in the patient's size, the growth has, of course, produced no symptoms, and, therefore, no examination has been called for. But ovarian and other pelvic tumors frequently induce such suffering as to demand an investigation, and if we can say only that it may be pregnancy, or may be something else, but that we must wait and see, our art falls far short of what is required of it. So many cases are known where the use of the sound, to aid in the settlement of such a question as this, has resulted in abortion, that we must plead for more precise teaching than is given by Mr. Wells. In spite of his experience, it is by no means "very seldom that a growing ovarian cyst, even when unilocular, will leave the symmetry of the abdomen unspoiled," nor is it "only when the abdominal wall is very thick, or the fetus misplaced or dead, that the heart-sounds cannot be heard after the sixth month."

From mere external manipulation there is rarely anything to discriminate between pregnancy and a parovarian cyst—and this is equally true of a very large number of ovarian tumors—save the rhythmic contractions of the uterus in pregnancy. Of this most important sign, Mr. Wells makes no mention whatever, though it is by far the most trustworthy of all, excelling even the sound of the fetal heart in value. We have experienced many cases of pregnancy where the fetal heart could never be heard at all, there is nothing in fetal displacement to prevent its being heard, and we have had cases of ovarian tumor diagnosed by others as pregnancy, on account of their belief that they had heard the beatings of a child's heart through the abdominal walls.



Mr. Wells has discovered a singular novelty in what he terms "the usually open state of the os in ovarian disease," which he tells us does not invalidate the use of the sound. The only objection to this teaching is that, if it is a case of pregnancy, the use of the sound will correct the mistake and alter the condition, very much to the practitioner's detriment and the patient's danger. If a practitioner cannot diagnose between an ovarian tumor and a pregnancy without the use of the sound, he had better give the matter up altogether; and if he is able to diagnose a case of extrauterine fetation from the description given at page 122 of this book, he will earn his patient's gratitude.

Curiously enough, Mr. Wells points out the impropriety of his teaching concerning the needlessness of attempting to diagnose between early pregnancy and an incipient ovarian tumor by an illustration at the end of this chapter. It is one of the few new woodcuts in the book, and represents a sportive and recumbent fetus, contained in a retroverted uterus, which is supposed to be causing distention of the bladder, and we are gravely informed that this combination might become the cause of an error in diagnosis. The illustration itself is a very inaccurate one, and it serves to show that Mr. Wells might, with immense advantage, have given more time to the discussion of the diagnosis of "incipient ovarian tumors."

The third chapter, which is headed "The Medical Treatment of Ovarian Tumors," might be passed over as so many blank pages, for there is no medical treatment for ovarian tumors. But there is one sentence to be found here which is noteworthy, because it is really new and praiseworthy, even though it is quite contradictory of teaching to be found elsewhere in the book: it is, "I have become more and more disposed to advise the removal of an ovarian tumor as soon as its nature and connections can be clearly ascertained, and it is beginning in any way, physically or mentally, to do harm, since the risk of the operation under such circumstances is certainly less, and the possible evils of delay are eluded." This sentence we thoroughly indorse.

This naturally leads us to the question of tapping, upon which subject Mr. Wells has a good deal to say, as might be expected, seeing that it is an operation which he has largely practised.

He opens the chapter with a quotation from Stilling, that "No surgeon should ever puncture an ovarian cyst. Tapping is a crime."

We are not disposed to indorse Stilling's strong language, but there is no doubt that the experience of modern abdominal surgery is all in this direction, in spite of Mr. Wells, who still argues for tapping. He tabulates the results of his first five hundred cases, with a view of displaying the influence of previous tapplings on the mortality of subsequent ovariectomy, and sums up a series of figure-twistings with the statement, the investigation "leaves an impression that the aspect of the question remains unaltered." So it may be for Mr. Wells, but he can look at it only with an experience which has a mortality of twenty-five per cent, and this is far more than enough to make his figures absolutely worthless for any purpose whatever. The younger ovariectomists, who have brought their mortality down to five or six per cent, are all crying out strongly against tapping, and this is quite enough to condemn it. Mr. Wells still recommends tapping by the vagina and injection of iodine or sulphurous acid, but in this we think he stands alone.

and sincerely trust, for the sake of suffering humanity, that he may continue to do so.

In his chapter on the rise and progress of ovariectomy, Mr. Wells has made very few additions or alterations of the corresponding chapter of his book of 1872. The first to be noticed is in the allusion to Houston's case (1701), of which Mr. Wells now says: "Inasmuch as though the operation was not one of complete excision of the tumor, it was planned with that intention." Here Mr. Wells is entirely wrong, as any one may prove by reading Houston's account. There is no evidence whatever that Dr. Houston intended a complete ovariectomy, but it is perfectly certain that he removed the whole tumor, because he defines the side from which the pedicle grew. Most unfortunately Houston does not tell us what he did with the pedicle, but it is certain that he dealt with it. Perhaps he tore it across and it did not bleed.

Of the successful ovariectomies alluded to by Mr. Wells in England up to 1843, every one will be found, on reference to the original descriptions, to be cases of removal of parovarian cysts and not of cystic ovaries. Dr. Clay was the first to do ovariectomy successfully in England, as Lizars was (after Houston) in Scotland.

The most important alteration of this historical chapter occurs at p. 194, where the history of the clamp is dealt with, and this may be regarded as Mr. Wells' *apologia*. It therefore deserves careful examination.

He tells us, as he told us in 1872, that in the year 1850 "Mr. Duffin inaugurated a new era in ovariectomy by pointing out the danger of leaving the tied end of the pedicle to decompose within the peritoneal cavity, and by insisting on the importance of keeping the strangulated stump outside." It is most singular that this sentence should be repeated in 1882, when we know conclusively that the tied end of the pedicle does not decompose within the peritoneal cavity, and that our mortality has been reduced to five per cent by reverting to the practice of Nathan Smith (1821), and leaving the tied end to take care of itself. Mr. Wells has frequently professed to have been very much influenced for good by vivisectional experiments. We may well ask the question, why did he not avail himself of the results of millions of such experiments on pigs, which have been carried on for centuries in order to arrive at the intraperitoneal method, now adopted by everybody? It is still more difficult to see why the immense success (immense compared with Mr. Wells' success with the clamp) which Nathan Smith and Tyler Smith had with the short ligature should have been so completely overlooked. The real era in ovariectomy was in 1867, when Baker Brown came to grief. The intraperitoneal method had been revived by Baker Brown in another and, perhaps, better form. When he went to the wall, Mr. Wells and the clamp had the field to themselves, and the result was that ovariectomy, and all that has come from its recent success, was kept back for a generation.

On page 202, Mr. Wells admits that his cases with the cautery turned out well, and that "Baker Brown was concurrently doing better still with it," and yet he went on with the clamp. His apology is that he was not assured of Mr. Baker Brown's greater success at the time. But it was Mr. Wells' duty to be informed on such a subject, and as they both lived in London, there could have been no difficulty in this. Mr. Brown published his cases, and evidently Mr. Wells doubted them. The whole world knows now that they were true, and that they were doubted, and that his example was

not followed, has turned out to be a misfortune for humanity of an immeasurable intensity. Mr. Wells says that he "cannot be responsible for not finding out the whole truth, or not seeing better than others in the same darkness." We fear the judgment of the future will be against Mr. Wells in this matter. For ten years he had opportunities which have been granted in no other instance in the history of surgery, and he left it to Dr. Keith to restore the light. And with all this against him and his practice, we find him, at pages 317 and 324, practically recommending the clamp still. It is, of course, always impossible to understand contemporary history, and only the writer of the history of ovariectomy thirty years hence will be able to give a perfectly clear and unbiassed judgment. But Mr. Wells, in his own history, gives no grounds for a favorable verdict. Speaking of a period which is vaguely indicated, but which seems to have ended in October, 1876, he says: "The work of ovariectomy was now becoming a matter of routine. Series of hundreds succeeded to series of hundreds, and happily with regularly diminishing losses." But when we appeal from Mr. Wells' statements to Mr. Wells' own statistics, we find evidence enough of the routine and of the hundreds of cases, but the diminution of the losses is not quite so clear. An analysis of his table gives the following results:

	MORTALITY PER CENT.
First hundred	34
Second "	28
Third "	23
Fourth "	22
Fifth "	20
Sixth "	29
Seventh "	24
Eighth "	24
Up to October, 1876.	25.5 average.

But up to 1867, Mr. Baker Brown, by the intraperitoneal treatment of the pedicle, had brought down his mortality to ten per cent, and there remains, therefore, an immense amount of explanation of this important question due from Mr. Wells. In the two hundred cases operated on after those tabulated above, Mr. Wells obtained a mortality of 14.5 per cent, and upon this we shall have something to say by-and-by.

In discussing his mortality, Mr. Wells has used his figures in a series of tables which are not worth discussing, as they in no way help us to understand the question: in fact, they may be said to succeed at first sight in leading the reader away from the facts, and in covering up the true issues. The same may be said about some of his utterances upon the all-important question of the extra-versus the intra-peritoneal treatment of the pedicle. Mr. Spencer Wells has always persistently argued that because (p. 220), in his hands, the clamp, up to 1878, had a mortality of 20.73 per cent and the ligature had a mortality of 38.2 per cent, therefore the extra-peritoneal treatment must be the best.

So long as Mr. Wells was the leading authority on ovariectomy, this argument, unfortunately, was accepted: but the answer to it now is that all Mr. Wells' figures were so saturated with the qualification of high mortality that they are really worthless for deciding such a question, or, indeed, any other. Keith has said, and we entirely agree with him, that in the great majority of fatal



cases the result is due to some defect in the operation. The modern mortality of ovariectomy proves this, and Mr. Wells must accept the more disagreeable and alternative criticism which rests under this statement. Everybody has given up the clamp, and without Listerism, Keith, Tait, and Bantock get better results than they did with it. Therefore Mr. Wells can no longer retreat under the shadow of Listerism and say, with any hope of being agreed with, "To my mind, one great merit of the antiseptic system is, that it has made the intraperitoneal method, which was formerly the less, now the more successful method of dealing with the pedicle." This is simply nonsense, in face of the facts.

Mr. Wells repeatedly stated, concerning his high ligature mortality, that he used the ligature only when the pedicle was too short to use the clamp. He further says now: "I am quite sure that, as has been suggested, the extraperitoneal did not represent the simple, and the intraperitoneal the complicated cases. The difference was simply that of long and short pedicle." Precisely the difference between an easy and a difficult case, so that Mr. Wells admits the full force of the criticism.

At the conclusion of this chapter, the history of ovariectomy in America is discussed in half a page. This is a matter of the utmost regret. Seeing how the operation was reared on the new continent, seeing how the great essential of the intraperitoneal treatment of the pedicle was born there sixty-one years ago, we think Mr. Wells might with advantage have rendered the history of American gynecology in greater detail, and with a completer acknowledgment of what the world owes to it.

In his sixth chapter, Mr. Wells enters into an interesting discussion on the ratio of ovarian disease to the population, and though not very pregnant of result, his facts generally are in favor of the widely-spread impression that ovarian tumors are more frequent than they used to be. Certain it is that those of us approaching middle age, and who have been engaged since youth in this special line of practice, see very many more of these cases than came to the consulting rooms of our masters, and this increase is not to be explained merely by the fact that now they can be easily cured, whereas formerly they could have only palliative treatment. In this chapter, Mr. Wells again introduces the question of tapping, and advises that, in cases of really simple cyst, this operation should be forced upon the patient "by almost a refusal to do ovariectomy until it has been tested. But this advice as to tapping, and especially as to renewed tapping, as a means of cure must be restricted absolutely to simple cases in which the cyst is single and the contents clear and non-albuminous." We have already expressed our dissent from this advice, and our belief that tapping is a mischievous practice. The trouble about Mr. Wells' advice is that it rarely can be asserted that any cyst is simple until it has been emptied, and then the mischief has been done.

Mr. Wells also reverts to the question of adhesions, and here again we differ from him entirely, as it has not been proved, in modern practice, that pelvic or visceral adhesions add much to the mortality of ovariectomy; and here again Mr. Wells' figures are of no value whatever on account of his high death-rate. He, in fact, points out himself that, as the outcome of one man's practice, they necessarily must have a very serious qualification.

At page 274 is a very curious full-page illustration, which represents Mr. Spencer Wells (in portrait) performing ovariectomy. It is a very poor woodcut and is very badly drawn. The likeness of

the centre figure to Mr. Wells is very fair, only the head is apparently twenty per cent too large for the body; the incision is in an impossible position and is many inches too long, and the spray is playing against the window panes, some yards away from the patient. The author tells us that this is how the spray is arranged, "always supposing the surgeon uses the spray." Some of the other illustrations in this chapter have a curious resemblance to Krasowsky's plates.

It would be wearisome to follow Mr. Wells over the details of the operation, a field affording great latitude for difference of opinion, as upon the more important points we have already expressed our views fully. He recurs to the treatment of the pedicle, with recommendation that it should be eclectic, as "no surgeon who has had much experience of ovariectomy would bind himself to adopt in all cases either the extraperitoneal or the intraperitoneal method, or any of the modifications by which either principle is carried out in practice." How little this view is consistent with fact is shown by the practices of Keith and Tait. The former uses the cautery exclusively for all cases, and the latter the ligature in the same way. The mortality of these two surgeons is almost identical, and has altogether put Mr. Wells' results into the shade.

At page 326 a mortality of 12.5 is admitted by Mr. Wells for the cautery amongst the first 500 cases, and we may well ask again why, in the face of this success—never approached by Mr. Wells in any other way save with the ligature—why did he not follow the example of Mr. Baker Brown?

When dealing with the question of drainage Mr. Wells is not consistent. At one part of his book he tells us that Listerism has made it needless, as the retained debris and effusion do not decompose under the Listerian method, whilst further on he asserts that Listerism has not banished septicemia, the plague of abdominal surgery. He objects to the drainage-tube "that even if the patient recover, there is a great liability to ventral hernia." Dr. Keith denies this entirely, and he has undoubtedly had a great deal more experience than Mr. Spencer Wells in this matter.

There can be no doubt that the great merit to be attached to the name of the author of this book in connection with ovariectomy is in his publication of the statistics of his work in such a way as almost to put them beyond cavil. The battle of the operation was thereby simplified, and however much his work is to be regretted concerning the clamp and some other matters of less importance, here he deserves praise. If we could persuade other surgeons to follow his example for other operations, a great deal of nonsensical and absolutely misleading statements might be saved. But even here Mr. Wells cannot defy criticism. The very last sentence of chapter nine awakens suspicion. "I purposely avoid relating a case (No. 917) where a pair of forceps was found in the bladder a month after recovery from ovariectomy, as the occurrence is still to me inexplicable." At page 389, case 917 is recorded as a recovery, and we may well ask why is this? That a pair of forceps was removed from a patient's bladder a month after the operation means one of two things. Either the forceps were put in through the urethra by the patient or with her consent during the recovery, or they were left in at the operation. Which is the more likely alternative? If the latter, then the case was not one of recovery from the operation, but of death from it, and it would have been so if the patient had died from the same cause years after the ovariectomy, as indeed seems to have been the fact in case 86, of

which the details are given at page 434. It is difficult to see why this case should be regarded as a recovery.

This might lead us into a discussion of the question, What constitutes recovery from an operation? a most tempting field of inquiry. Time, however, does not admit of it; but clearly no case can be claimed as a recovery which dies subsequently in consequence of some error in the operation, or from some such incident as prolonged pelvic suppuration round a stump. On this ground Mr. Wells' statistics deserve careful scrutiny, for the cases referred to make very perceptible impressions on the mortality of the series in which they occur.

Again, at page 394 et seq., are given the full details of a case operated upon in January, 1863, which ended fatally. Mr. Baker Brown had removed the left ovary six months before, and Mr. Wells' operation was for the removal of the right. This case is not given in the table of the thousand cases, but is to be found in a special table at page 413. As it was a case of removal of one ovary, there is no reason at all for its non-appearance in the full table, and its presence would have made a very distinct difference in the mortality of its series.

Finally, there is a most serious omission of a table showing the abdominal sections other than those for completed ovariectomy which Mr. Wells has performed. This is most particularly prominent in the case of incomplete operations. Far more can be learnt from failures than from successes, yet Mr. Wells not only lets the chapter on incomplete operations stand very much as it is in the volume of 1872, but he has omitted its table. Mr. Wells has not been reticent in his criticism of those whose publications did not come up to his idea of exactness, but in future he must be more circumspect in his own details.

The really new work in this book consists of the last sixty-five pages, in which he deals with the recent extensions of ovariectomy, and removal of the uterus. In eight pages he dismisses in the most cursory fashion a subject upon which volumes have been and will be written. It is very curious to find that he deals with innovators very much in the language dealt out to himself some twenty years ago, when ovariectomy was struggling into existence. Concerning the so-called oöphorectomy, he makes the satisfactory admission that it is far more difficult than ordinary ovariectomy, but as he has evidently removed only normal ovaries, it is difficult to see how he has arrived at this conclusion. Concerning removal of the uterine appendages for hemorrhage or other cause which makes it advisable to arrest menstruation, he is under the impression that "the ligation of the spermatic artery has more to do with the cessation of menstruation after operation than the removal of the tube itself," in spite of the anatomical difficulties in the way of such a belief, and the statement of those who have had the largest experience of this operation, that they have never seen or felt the spermatic artery in any of their operations.

In his discussion of uterine tumors he continues the use of the obsolete term "fibroid," though modern pathology has established the word "myoma" as the correct term. His results in ablation of the uterus have had a very heavy mortality, fifty per cent. This, it seems to us, is due to the use of the ligature in securing the pedicle; as of his twenty deaths, fifteen occurred with the ligature, and only one with the clamp; whilst in nineteen recoveries, fourteen were with the ligature and four with the clamp. In the experience of nearly all other surgeons in this line of practice, the



ligature has given bad results, and the clamp, in some form or other, has been markedly successful. There seems to be no doubt now that for a uterine pedicle the clamp is the right thing, and it seems curious to find Mr. Wells deserting his old favorite just where others have adopted it.

The volume concludes with the narration of a case of removal of a uterus, pregnant to the sixth month, of which the cervix was affected by cancer. The patient recovered from the operation, but the disease returned in six months. It is not possible to regard this as a piece of good surgery. If the case had been allowed to proceed for a few weeks till the fetus was viable, the performance of a Cesarean section would have saved the child, and the mother's life would not have been materially shortened. As the disease inevitably returns, such operations will speedily fade from the surgical record.

LAWSON TAIT.

## ABSTRACT.

**1. Gusserow (Berlin) : Concerning Puerperal Fever** (*Centr. f. Gyn.*, Oct. 28th).—The mortality at the Maternity of the Charité Hospital in Berlin diminishes year by year, in spite of unfavorable circumstances connected with the hospital, which leads to the conclusion that *locality* has not the absolute importance which it was formerly supposed to have. He considers that Semmelweiss was correct in defining puerperal fever as an infectious disease which proceeds from wounds of the genital tract. Etiologically puerperal diseases attended with fever must be divided into two leading groups, which are conditioned upon the action of atmospheric air upon dead organic material in the genital canal. Putrefaction, resorption, and fever result. These diseases (puerperal) are commonly united with local troubles, the most frequent of which is parametritis. Genuine puerperal fever presents the phenomena of septicemia, lymphangitis, or pyemia when the poison which has been absorbed is sufficiently powerful, and the differentiation between these forms is not easy at the beginning of the disease. Scrupulous cleanliness should be the chief factor in prophylaxis, disinfection is less important, especially as it must be carried out by nurses and midwives. [Herein is the excellence of our system of trained-nursing; for we get a higher order of intelligence, one which is better calculated to carry out a doctor's directions than one generally sees in German Hospitals.]

A. F. CURRIER.

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### THE SYMPTOMS AND DIAGNOSIS OF MALARIA IN CHILDREN.

BY

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Children.

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(Continued from page 218.)

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UNDER the *complications* of malaria, I shall include not only those which we see when the malarial symptoms are prominent, but also the cases sometimes termed the irregular or masked forms, which are due to the predominance of certain symptoms referable to the particular organ upon which the poison seems to be localized.

We may divide the complications for the most part into three groups: the respiratory, the gastro-intestinal, and the nervous. These, of course, vary somewhat with season and with locality. The frequency with which the respiratory and gastro-intestinal tracts are implicated is partly explained by the fact, quite generally admitted, that the malarial poison may find access to the body by either of these avenues, and thus its effect may be considered as in a measure local. But far more important, it seems to me, is it for us to remember that these form the most vulnerable portions of the child's organism. Hence we should naturally expect them to be deranged. The peculiar susceptibility of the child's nervous system, which we see daily demonstrated to us, is a sufficient explanation of the complications referable to those organs.

Commencing with the respiratory tract, I would say that I

have not met with any well-marked cases of laryngeal symptoms of malarial origin. Bohn, in the *Jahrbuch für Kinderheilkunde* for 1873, reports the following case:

CASE VIII.—A child, eleven months of age, was brought to the Polyclinic May 7th, 1864, with very hoarse voice, short, hard hollow cough, in- and expiration labored, "sawing," and of croupy quality; skin hot; pulse 160; resp. 30; fauces reddened; tonsils swollen; glands at angle of jaw enlarged and painful; lungs and bronchi free from evidence of disease. A history was given of an ordinary cough for a few days, and since noon of the same day, high fever with laryngeal symptoms had come on, increasing until they had assumed their present severity. Ice ordered locally, emetics and senega internally. Toward evening, there was an improvement in the symptoms, and no return during the night. On the following morning when seen, the stridor was all gone, and all that remained of the symptoms was a slight catarrhal cough. Temperature normal, pulse about 100. The child remained in this condition until about 5 p.m., when a return of the severe symptoms of the previous day took place: high fever, great restlessness, dyspnea, hoarseness, stridulous breathing, etc. In spite of the use of emetics, these continued until about two o'clock the next morning, when they all passed off, and the child slept well until seven o'clock. On the morning of the third day, the same favorable condition was present as on the two preceding days. Treatment by quinine was now begun. Betwen seven and eight in the evening, a shorter and much milder paroxysm occurred, followed by a quiet night. The quinine was continued, with the effect of preventing any return of the paroxysms. All that remained was the slight catarrh of the larynx and pharynx. The examination of the spleen was unfortunately omitted. "A new warning," says Bohn, "to omit no organ in the examination of a child." He met with another similar case in the same month, of the tertian type, in an infant, also cured by quinine.

Bronchitis is, perhaps, the most frequent of all the complications. I have found it in about one-fifth of my summer cases, and in fully one-half of my fall and winter cases. Again and again, after treating bronchitis with the usual remedies for a considerable time without making any impression upon it, have I found, upon more careful examination, an old malaria as the underlying cause. It accompanies both the acute and the sub-acute cases. In the former, occurring with acute febrile symptoms, it frequently leads to the diagnosis of broncho-pneumonia. In the latter, it often, by its protracted course, brings about an anemia and a cachexia, in which condition the children fall a ready prey to the acute pulmonary diseases.



The pulmonary congestions which we sometimes find in the most acute cases have been in my experience among the most misleading in diagnosis. They are analogous in their pathology to the congestions of the spleen and the liver. Occurring in a severe form in the adult, they are described as one of the types of pernicious fever. I have not found them well described by any author who has written on malaria in children. I have seen seven well-marked cases without a fatal result. These, I believe, often pass under the diagnosis of malaria complicated by pneumonia.

The symptoms in my case have been quite uniform, and very characteristic. The invasion has been always acute, the temperature high, from  $104^{\circ}$  to  $106^{\circ}$ ; the respirations exceedingly rapid, in three or four instances reaching 100 per minute, and resembling more the superficial panting breathing of lobar, than the labored breathing of lobular pneumonia; the face is often cyanotic, and the pulse very rapid, from 160 to 200 per minute. There have been in one or two cases head symptoms, generally marked drowsiness.

The physical signs which I have usually found have been a slight increase of vocal fremitus, dulness on percussion, sometimes marked, but usually slight; respiration always high-pitched, sometimes broncho-vesicular; resonance of the cry exaggerated, sonorous râles, and occasionally coarse and fine mucous râles, all of these likewise of a high pitch. The signs have been sometimes general on both lungs, but usually most marked behind and toward the apices. In two instances, they have been more marked in the axillary region of one side than elsewhere. I have seen them confined to a single lung, and once to a single lobe.

Some may be inclined to take issue with me in regard to the diagnosis of these cases. To such I would say that in several of them my first diagnosis was unhesitatingly made of pneumonia; only the subsequent progress and termination of the cases convinced me of their true nature. When I have seen patients in the afternoon with the symptoms and signs such as I have above described, and found them on the following morning running about the house, with temperature, pulse, and respiration normal, and only the signs of an insignificant bronchial catarrh found in the chest; when I have seen these recur on

the following days until quinine was administered, or the disease cut short with a single paroxysm by full doses of this drug; and when I have found marked splenic enlargement co-existing, I have become convinced that the explanation I have offered best accords with the symptoms.

A few illustrations will make the subject a little clearer.

CASE IX.—Hugh M., aged three years, came under observation May 15th, for slight eczema of ear, naso-pharyngeal catarrh, and bronchitis, which had existed since March. He was pale and anemic, and had no appetite. There was no fever. Cod-liver oil and tonics were ordered. Two days later, he was brought back with the history that he had been as well as usual until the evening before, when he was taken quite abruptly very ill, the cause of which was thought to be an exposure to cold upon the roof of house, in the afternoon. He had a very high fever, which lasted all night, and, in fact, until he was seen in the afternoon. This was accompanied by a cough, great restlessness, and complete anorexia. On examination, there was noted a good deal of prostration, the temperature was found  $104\frac{1}{2}^{\circ}$ , pulse 160, and respirations 70 per minute. Well-marked signs of engorgement at the apices of both lungs were present, and also in the right axillary region. Here were heard very high-pitched breathing, some sonorous, and a few mucous râles, but no bronchial breathing. There was slight dulness on percussion.

The diagnosis of pneumonia was unhesitatingly made. Poultices were ordered to the chest, a mixture of ammon. carb. to be given every two hours, and, in view of the height of the temperature, cinchonidia gr. x. to be taken at night, and repeated in the morning. My friend, Dr. Cauldwell, visited the boy the next day. He found him lively, playing about the bed, with a temperature of  $99^{\circ}$ , and respirations 35. The fever was reported to have kept up until about four o'clock in the morning, when it passed away, with a profuse sweat, and had not been noticed since. The signs in the chest had all disappeared, except a few scattered râles, probably the result of his previous bronchitis. The cinchonidia was continued, and no return of his febrile symptoms took place.

CASE X.—Mary S., aged fifteen months, was brought to the dispensary, August 18th, with the following history: She had been well until April last, when she had, the mother reports, "pneumonia," from which she recovered in a week, without being very sick at any time. A slight cough has persisted since that attack. For four days before she was seen, she had had fever, which had been quite high, and accompanied by a short cough, and very rapid breathing. The bowels were reported loose. No more satisfactory history can be obtained, as the child has not been very carefully observed.

On examination, she was found a stout, well-nourished child. Countenance somewhat cyanotic. Respirations 100 per minute,

pulse 120, temperature  $104^{\circ}$ . There seemed to be very little prostration. An attempt was made to examine the chest, but the child made so much disturbance, nothing satisfactory was obtained. A positive diagnosis was reserved until the temperature could be watched for a day or two, the absence of prostration being the chief point against the diagnosis of pneumonia.

On the following morning, the temperature was found  $104\frac{1}{2}^{\circ}$ , respirations 100, as before, but very superficial, and much less labored than is usually seen with pneumonia. Occasionally they sink to 60 or 70, but soon rise again, the child remaining quiet all the while. The cry is strong, but short and interrupted. On examination of the chest, nothing is found anteriorly but exaggerated breathing, and nothing posteriorly, except over the middle lobe of the right lung, where the breathing is very high-pitched, and at times broncho-vesicular; the resonance of the cry is exaggerated, and a few sonorous and fine mucous râles are heard. The rational symptoms are no more severe than yesterday. The child was not seen the next day, but the mother reported she was free from fever and played about during the whole day, and was not drowsy, as she had been on the previous days.

On the following day, August 21st, the fever was reported to have come on again, about noon, and when seen in the afternoon, she had a temperature of  $103^{\circ}$ , and the respiration had become accelerated to 96 per minute. Cinchonidia was now begun in gr. iij. doses every three hours. The next morning, the temperature was  $100^{\circ}$ , and respirations 48. The breathing over the right middle lobe behind is still high-pitched, but no râles and no dulness. She is ordered to continue the cinchonidia gr. iij., t. i. d. The case was not seen for two weeks, when the mother reported there had been no return of the fever, but that some cough had been present up to the present time. All the former pulmonary signs had disappeared, and only a few coarse sonorous and mucous râles were heard scattered over the whole of both lungs. Two or three other members of the family had been sick, meanwhile, with fever, which, from the meagre accounts given, seemed to be malarial. They lived on the ground floor of a tenement house, about one block from the North River.

Schmiedler seems to have seen at least one case belonging to the above category, if we may judge from the meagre history which is given in his article, in the *Jahrbuch für Kinderheilkunde* for 1879.

It is as follows:

CASE XI.—A girl, aged seven years, daily about six o'clock was taken with high fever, great restlessness, severe dyspnea, with asthmatic attacks, great precordial oppression, no known cause. All these symptoms subsided with sweating. The spleen was found enlarged, the temperature reached  $104\frac{1}{2}^{\circ}$ . Daily com-



plete apyrexia. Treatment by quinine begun on the third day, abortive attack the same evening. Quinine was continued with the effect of accomplishing a complete cure by the fifth day.

That pneumonia, both lobar and lobular, do occasionally complicate malarial fever, there can be no doubt. I have seen examples of both varieties in which the physical signs were typical. The following case affords an excellent illustration of the way in which the symptoms of the two diseases may be blended. The fever was at first distinctly remittent, then became continuous as the pneumonia developed. It declined abruptly when resolution began on the tenth day, but rose again without any change in the physical signs, being finally and permanently controlled as soon as full doses of quinine were retained.

CASE XII.—Mary O., aged twenty months, was brought to the dispensary for treatment November 8th, with the history that she had not seemed well for five days; no fever was noticed until three days before. It came on every day about 10 A.M., and lasts all day and most of the night. There had been slight delirium at night occasionally. During the day much drowsiness accompanied the fever. The child had vomited once; the bowels were regular; the tongue was heavily coated. Rectal temperature was  $104\frac{1}{2}^{\circ}$ , respirations 40. The lungs and the throat were examined, with negative results. There was not much general prostration. The spleen seemed tender, but the child was so irritable its size could not be made out with certainty. A brother was under treatment for malarial fever, and that diagnosis was made in this case. Cinchonidia, gr. xx. a day ordered.

Two days later, it was reported the fever had been continuously high since the last visit. She vomited three or four times this morning; bowels loose; was too ill to sit up at all yesterday, and took nothing to eat. She lay drowsily upon the mother's lap and made no resistance to the examination. Temperature,  $101\frac{1}{2}^{\circ}$ ; there was considerable cough, but nothing important was found in the lungs. The spleen was found by percussion to be much enlarged, and its lower border could be distinctly felt an inch and a half below the free border of the ribs. The same treatment was continued. When she was next seen, three days later, the temperature was  $103\frac{1}{2}^{\circ}$  and the respirations  $50^{\circ}$ . There had been little or no remission in the fever, but every night about ten o'clock the hands and feet were noticed to be very cold. She is drowsy and stupid all the time. Has vomited about one-half of the medicine. There was found at the inferior angle of the right scapula a small area of marked dullness, bronchial breathing, and bronchophony. Elsewhere the lungs were free from abnormal signs, except a few scattered râles. The diagnosis of pneumonia

was now made unhesitatingly. Stimulants ordered in addition to the cinchonidia. On November 15th, two days later, the temperature was  $101\frac{1}{4}^{\circ}$  and respiration 78. Fever had continued until this morning, when a decided remission occurred. Dulness, bronchial breathing and voice are still present over the same area, but there are heard also moist, mucous, and subcrepitant râles. The pneumonia is evidently resolving. The next day the signs of resolution were more marked, but the temperature had risen to  $102\frac{3}{4}^{\circ}$ , the reason for which became apparent when it was learned she had had no cinchinidia for nearly three days. It had caused so much vomiting the mother had discontinued it altogether. Dextro-quinine was ordered, gr. v., q. 4 h., and on the next day, the 17th, the temperature was  $98\frac{1}{2}$ , respirations 32, and the spleen normal in size. This medicine was continued; no further rise in temperature took place; the lung cleared up completely in a few days, and a rapid convalescence took place.

She was examined about two weeks later, and no relapse had occurred.

I have seen another case in which malarial symptoms were so interwoven with those of lobular pneumonia as to obscure the diagnosis for a long time.

The explanation of these cases, it seems to me, is that the repeated congestions which occur in the lung finally lead to the development of the inflammatory process, rather than that debility induced by the pneumonia leads to a manifestation of malarial poisoning which had been latent. I have, however, seen one case which seemed to have developed in this way.

Pleurisy with effusion I have seen in only one case; its occurrence with malaria seems to have been a coincidence merely.

True spasmodic asthma of malarial origin I have seen in six cases. I am indebted to Dr. Ripley for first calling my attention to this complication. Bohn merely alludes to it. I have been unable to find any description of it in any of the works on malaria in adults which I have consulted. In one of my cases it followed an acute pulmonary congestion and was accompanied by slight bronchitis. In four cases the febrile symptoms were very slight and in some absent entirely. The occurrence of repeated attacks with marked splenic enlargement and the prompt relief on the exhibition of antiperiodics were the characteristics of the cases. In most of them the paroxysms were accustomed to come on early in the evening of each day. It was for relief from these attacks that the patients

usually applied for treatment. Their dependence upon malarial poisoning was not made out in some cases until several attacks had been observed, which were very slightly or not at all affected by the usual remedies.

CASE XIII.—James O., aged six years, came under observation at the Dispensary October 15th, 1882, pale and anemic, with a coated tongue and a loose cough; slight fever reported at night, bowels regular. Only a hurried examination was made and a cough mixture and a tonic ordered. He was not seen again for two weeks when he came back with his cough aggravated, a history of marked febrile movement for a week, higher every night, and frequent sweats occurring irregularly. For the past two weeks he had had severe dyspnea which came on in paroxysms every night, so severely he could scarcely lie down. Breathing was accompanied by a loud wheezing which could be heard all over the room. During the day he suffered little from dyspnea, but complained much of pains in his stomach which he had never done before, and of severe frontal headache, gradually growing worse for the past week. Never any symptoms of asthma present before this attack. A maternal grandfather was reported to have had asthma, but no other cases in the family.

The spleen was found enlarged. Over the whole chest, but especially behind, were heard an abundance of sibilant, sonorous and musical râles, and some of a mucous and subcrepitant variety. The breathing was somewhat labored and expiration was prolonged. Temperature about 100°. On the following morning râles of the same character were heard, though much less abundant, and the temperature was normal. Diagnosis of asthma of malarial origin was now unhesitatingly made and cinchonidia gr. v., 4 t. d. ordered.

A note made four days later, states that he had had little or no return of the fever. The dyspnea and wheezing at night had been much less marked though they had existed. A few mucous and sonorous râles were heard at the lower half of the chest behind, pain in the stomach was still present. Temperature was normal; ordered to continue the medicine.

On November 6th, three days later, it was reported he had had no more pains, fever only once and then slight, still some cough and a little wheezing at times. Continue the medicine.

November 9th, on examination of the spleen, a few days ago, no enlargement could be found. He has had no more fever and no more pains, the tongue is clean, the appetite good, and no abnormal signs found in the lungs. To continue the medicine in gr. iij. doses t. i. d. for a week, and then stop it altogether.

CASE XIV.—Peter K., aged six years, was brought for treatment July 24th. The notes taken at that time state that he had been complaining for a month of attacks of dyspnea and had been worse for two weeks; dyspnea being especially marked when he was lying down. He had had similar attacks previously.



The lungs were not examined for lack of time, as I had thirty-two other new cases that afternoon. The case was regarded as one of chronic bronchitis, a simple cough medicine and a tonic ordered. The next morning the lungs were examined with some degree of care. Over the whole chest, in front and behind, were heard an abundance of sonorous and sibilant râles, some being musical in quality; no moist râles; there was considerable dyspnea manifest. The temperature was normal. No history of asthma in either parent could be traced, but a maternal uncle was said to have suffered from this disease. The diagnosis of asthma was made and a belladonna mixture ordered. About a week later, he was reported a little improved.

He was not seen again until August 30th, when the mother brought him back, saying that the previous attack had gradually worn off, the medicine not being continued. He had then been quite well until about five days ago when his symptoms returned. The mother volunteered the information that with each one of these attacks he had complained of severe pains at the epigastrium, which seemed to her a singular coincidence. Our suspicions were aroused and on examining the spleen it is found immensely enlarged, extending downward to the crest of the ilium. The following history was obtained:

The first attack occurred about three and a half years ago. She lived then in the same neighborhood as now. Since that time he has had frequent attacks, always more often in spring and fall, lasting usually from four to six days. Never has there been marked fever, but often slight; bowels usually regular; vomiting often occurs in the attacks. No exciting cause known. All the attacks have been very similar to this one. Severe dyspnea always worse at night, at times amounting to orthopnea, when he assumes the characteristic asthmatic position. Attacks do not come suddenly, but are from twelve to twenty-four hours in developing.

Physical examination of the chest reveals all the signs of spasmodic asthma. The breathing is loud and wheezing and can be heard some distance from the patient. The heart is slightly enlarged, but no valvular disease can be made out. He is very pale and anemic. The tongue has a dirty brownish coating. Temperature  $101\frac{1}{4}^{\circ}$ , respiration 32, pulse 120. The bowels are loose. There is some tenderness over the epigastrium. Cinchonidia sulph. gr. v., 4 t. d.

The next day the mother reported that the severe dyspnea which had been accustomed to come on about eight o'clock, often so as to prevent sleep altogether, was not seen yesterday and that during the night no wheezing whatever was present. His temperature was then  $100^{\circ}$ , the breathing was natural, and the pulmonary signs normal. He said he was feeling much better. On the following day he was seen. His temperature was normal and he had had no return of his dyspnea. He did not appear again for a month. I visited the house and learned from his mother that the medicine had been discontinued a few days after I saw him and that he had had a relapse a few days before my visit. He did not come again under treatment.

*The gastro-intestinal disorders* which accompany malaria have been, for the most part, considered under the symptomatology. It only remains for me to mention here a class of cases in which we have the following symptoms: Vomiting and diarrhea, or diarrhea alone, recurring periodically every day or every other day, usually accompanying a febrile attack, the symptoms during the apyrexia being slight or absent entirely. The passages are often of a dysenteric character, being streaked with blood and accompanied by tenesmus. In some cases the febrile movement is absent entirely. The spleen is usually enlarged. The symptoms are but slightly affected by ordinary remedies, but yield readily to anti-periodic treatment. Case III. reported above illustrates this point. I have seen several which resembled it. I have not, however, met with any such typical cases as the following which are reported by Schmiedler. They occurred in Breslau, one of the most malarial cities in Germany.

CASES XV., XVI. and XVII.—Two little girls, aged respectively eleven months and two and a half years, on returning to the city from the mountains, were immediately attacked with a severe diarrhea without any evident cause, and which would not yield to any of the ordinary astringent remedies. The youngest became very weak and emaciated. He found on close questioning that the diarrhea came on every night at about three o'clock, with considerable prostration and great restlessness, but without fever being especially noticeable. Toward noon improvement always took place, the appetite returned and for the rest of the day they felt quite well, resting quietly until the hour named, when they awoke with crying, and diarrhea followed. Considerable enlargement of the spleen was found in both cases. Full doses of quinine were ordered; the attacks were immediately controlled; the splenic enlargement disappeared and no relapse occurred in either instance.

In the third case, in a girl of six years, every evening punctually at seven o'clock, severe diarrhea took place, the passages being streaked with blood and as many as a half-dozen occurring in the course of three hours. The spleen was enlarged, the temperature ranged from 103 to 104°, with the general symptoms of very great prostration. By day there was complete apyrexia. The ordinary treatment was without effect. Quinine in full doses was then given and controlled the attacks. One relapse occurred after a few days with the former symptoms. This also was controlled by quinine, and no further trouble followed.

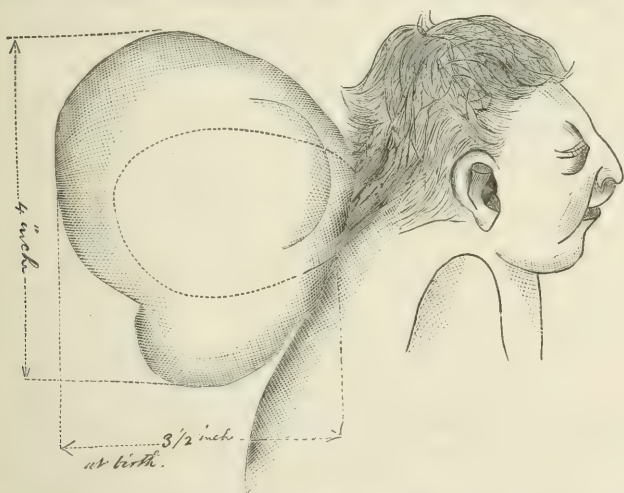
(To be continued.)

## A CASE OF CONGENITAL ENCEPHALOCELE, CHILD SURVIVING SIXTEEN DAYS.

BY

J. F. GOULD, M.D.,  
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THE accompanying drawing represents the appearance of a fetus which I delivered Nov. 16th, 1882. The mother was twenty-two years old; first child. Labor commenced Nov. 14th, at noon, terminated 16th, 7½ A.M. Mother had very good health during pregnancy, except some vaginitis, and a severe form of



articularia, during last few weeks thereof. The liquor amnii was estimated at one gallon; cord small, twelve inches long. The tumor pressed the head strongly on the pubis. Head engaged first, but tumor came down, and was delivered before head. Tumor measured four inches in longitudinal, and 3½ in transverse diameter. The drawing is the size of tumor, after death of the child, Dec. 2d, 1882, age sixteen days. About half a pint of fluid came from the sac when punctured. The dotted line indicates size of the brain. The child had convulsions for a few days after its birth, and rejected its food a few days before



its death. During labor I thought of every contingency, even of spina bifida, but the real cause of the complication did not occur to me until the head and tumor were before my eyes. Appended is the report of the examination of Dr. W. F. Whitney, of the Warren Anatomical Museum:

"The tumor arose from the occipital and upper cervical regions, and was formed of a sac, lined apparently with a continuation of the dura mater. Inside of the sac was a globular mass of brain substance, about two-thirds as large as the cavity of the sac. The intervening space was filled with a thin, watery fluid, dark-red in color. The surface of the brain mass was quite smooth, and covered with a thin membrane. As well as could be determined, this mass corresponded to the cerebellum, and it was thinned, and occupying the central portion was a cavity containing fluid. The softened condition of the cerebrium prevented any careful dissection from being made. In general it looked normal. The meninges were smooth, and there was no evidence of a purulent meningitis, while the post-mortem staining and decomposition obscured the appearance of the less severe forms."

#### A GOOD INFANT FOOD.

BY

S. B. SHERRY, M.D.,  
Delafield, Wis.

I HAVE tried the following mixture as a substitute for mother's milk, in a number of cases, and it has always proved very successful; so much so, that I have felt encouraged to advise its use. There is nothing original about the mixture. I direct the nurse to add a pint of barley water to an ounce of *pearl barley*, and allow it to cool, and then strain it.

One-third of a pint of this barley water, and two-thirds of a pint of fresh, undiluted cow's milk, are mixed, and sweetened with a teaspoonful of milk-sugar.

It is very important that common sugar be not used.

We have here a mixture very closely resembling human milk, in color, taste and consistence, and I have learned to rely upon it with great confidence.

## ABSTRACTS.

Prepared by J. FEWSMITH, JR., Newark, N. J.

1. Zimmerlin (Basle): **Hemorrhage after Tracheotomy for Croup and Diphtheritis** (*Jahrbuch für Kinderheilkunde*, XIX. B., 1 H.).—The article of DR. FRANZ ZIMMERLIN includes a careful search through the copious literature of the subject, a full description of the method of performing tracheotomy in the hospital at Basle (Prof. Dr. Hagenbach), tabular statistics of a large number of cases, and a careful analysis of the causes, prophylaxis, and treatment of hemorrhage after the operation.

The tracheotomy wound is open to the occurrence of secondary hemorrhage as any other wound. Causes especially predisposing to it here, however, are that one part of the wound remains open while the rest heals by granulation, that diphtheria alters the blood and increases the general hemorrhagic tendency, that the field of operation is rich in vessels, that the stagnation of the blood and increase of pressure during coughing, vomiting and forcing at stool, and during attacks of dyspnea, engorge the vessels of the neck, and that the taking out and re-inserting of the canula may disturb clots or even ligatures.

Bloody sputa occurring immediately, and for some hours after the operation do not signify much, but when this occurs from the third to the tenth day, it usually means more, and generally points to an ulceration at the end of the canula. It may be caused by injury to granulations which have projected through the fenestra. It may be due to diphtheritic ulceration in the trachea, or finally to pulmonary hemorrhage. The author acknowledges the difficulty of determining the source of the hemorrhage during life, and his differential points are not very practical.

More profuse hemorrhage may be divided into extra-tracheal and intra-tracheal. An intermediate class is formed of cases in which by ulceration through the walls of the trachea a vessel external to it is eroded and opened (arrosion of the arteria anonyma, or of some vessels of the thyroid). The hemorrhages may be arterial, capillary, venous, or parenchymatous. The arterial come from the anonyma and the thyroideal arteries. The former can only occur after tracheotomy inferior. Several cases are detailed in which the end of the canula ulcerated through the trachea directly over the anonyma, and two in which the artery was thus opened. The profuse capillary hemorrhages also probably come from the exuberant granulations around the ulceration caused by the canula. It may at first be slight, but cough, dyspnea, change of canula, etc., may rupture other vessels till the bleeding is profuse enough to threaten life. The venous hemorrhages are usually from the veins of the thyroid. Several cases are on record of parenchymatous hemorrhage from the thyroid, occurring usually at the first change of canula. Diphtheritis of the wound, consequent ulceration and erosion of vessels, of course, play a prominent part in the etiology of hemorrhage. Pressure of a too large canula may destroy the wall of a vessel in the wound, a ligature may fall off too soon, or a thrombus be disturbed by a change of canula. The hemorrhages occur from the second to the tenth day, and, if immediate help is at hand, can usually be controlled.

Prophylaxis of hemorrhage:—Careful ligature of all bleeding vessels

during operation, or, if there is need of haste, the artery forceps may be placed on the vessels, and left hanging till the tube is inserted, and then the vessels tied. The surface of the wound may be touched with liq. ferri sesquichlor., or, as lately recommended, with iodoform. The canula must fit nicely, and as soon as possible the stiff one be changed for the flexible one.

Treatment:—When the expectoration becomes bloody, the canula should at once be changed for a longer or a shorter, or better, Baker's flexible one. When the hemorrhage is not severe, it will probably suffice to keep the child perfectly quiet, and avoid as much as possible all congestion of the vessels. In severer cases, a little chloride of iron may be applied, or short inhalations of turpentine, or a 2 per cent chloride of iron solution may be given, and ice applied externally. In urgent cases, there must be no hesitation. If the bleeding vessel cannot be compressed against the canula, this must be removed, the blood drawn out of the trachea with an elastic catheter, and an attempt made to seize the bleeding vessel. Styptics must be used cautiously within the trachea, for fear of plugging it with clots. When the case is threatening, it is well to insert a tube (an elastic catheter), and press the trachea against it, or, if necessary, stuff around it with styptic cotton, meantime removing the blood through it by aspiration. The patient, meanwhile and afterward, must be kept as quiet as possible.

Discussing the effect of hemorrhage on the causation of pneumonia, the author concludes that, though pneumonia has frequently occurred after tracheal hemorrhage, yet the latter has so frequently occasioned no pulmonary troubles, and, on the other hand, pneumonia has been so frequent in these cases without hemorrhage, the probability is that the blood is not as important a factor in these cases as has been supposed. J. F.

**2. Dr. Richard Pott: Specific Vulvo-vaginitis in Infancy** (*Jahrbuch für Kinderheilkunde*. XIX. B., 1 H.).—Simple vulvo-vaginitis is not rare in children, and is most frequent before the fifth year, and then again at the time of puberty. Out of 3,921 girls treated at the author's clinic, from 1876 to 1882, there were 44 cases of obstinate, long continued, more or less profuse, purulent or muco-purulent discharge. These cases, which continue so long, and are so severe, the author claims are, almost without exception, specific and contagious. The author emphasizes this point, and was able to demonstrate, in nearly all of his cases, that the mother either had gonorrhea or syphilis. That the membrane of the vagina is not affected as often as that of the eyes, is explained by its more protected situation and shorter exposure during delivery. In fact, contagion, in most cases, takes place after delivery, from fingers, towels, sleeping in the same bed with parents who have gonorrhea, or directly from one child to another. These are by far the most frequent methods. In only two of the above cases could direct contagion from the male penis be proved, in both of which the fact was explained by the superstition among the peasantry that connection with a virgin instantaneously cures clap. In six of the forty-four cases, the children had congenital syphilis with marked manifestations. It was found, however, that general treatment was not sufficient to cure the discharge, even though it entirely removed the other manifestations.

The author's method of examination is very thorough, including spe-



culum and microscope, but there is not great difficulty in making the diagnosis.

His treatment, for a long time, has been about what is generally recommended, and has been very unsatisfactory. He now recommends two things. The first is the rupture or complete removal of the hymen, in very obstinate cases. This usually brings about a rapid cure. But lately he has found a remedy which he thinks will make even this unnecessary. It is iodoform. He used it first in powder form, but that being too troublesome, he now uses it in the form of bougies, five to eight cm. long, and as thick as a small lead-pencil. These are passed in till the lower end is just within the hymen. No intoxication ever occurred, and the effect is "eclatant." In only two cases has he had to put in more than one bougie. [Having tried the same treatment in four cases, I can speak very favorably of it, though my results were not so prompt, perhaps because the bougies used were much smaller. J. F.]

**3. Vohsen: Acute Rheumatism** (*Jahrbch. f. Kindhdkde.*, XIX. B., 1 H.).—Karl Vohsen in an interesting article discusses first the many theories as to the etiology of rheumatism, finds most of them untenable or unsupported by any definite facts, but leans rather to the belief that it is an *acute infectious disease*, due probably to micrococci in the blood. The many complications are discussed in relation to this point.

Childhood suffers from all the complications of acute rheumatism which befall adults. Paralysis of the muscles of the eye is the only one the author has not seen in children. But still rheumatism in children has its own characteristics. The severity and duration of the pain is less on the average than in adults, the duration in adults being two to three weeks and in children five to eighteen days. The complications in children show still greater differences. Chorea, a frequent complication in early years, is exceedingly rare in adults. Heart affections are very much more frequent in children. From his own cases and the records of many others the author finds that the heart is affected in nearly fifty per cent of cases in children. This complication is as apt to occur in mild cases as in severe ones, in fact some authors think it more frequent in the sub-acute cases.

The author then analyzes twenty cases which had recently come under his notice. The ages were between nine and fourteen years. No deductions as to hereditary influence or sex could be fairly drawn. In nine cases there was endo- or pericarditis. In none of these was the fever at any time above 103.2° F. and in one case there was no fever.

Swelling of the joints was observed in three cases. The pain was severe but of short duration. In all cases the salicylate of soda proved promptly effective against the affection of the joints, but had no effect on the development of the cardiac complications. These occurred in about half of all the cases. The mitral valves and the pericardium were most frequently attacked. The lighter forms of rheumatism seemed especially to predispose to the heart troubles, making examination of the heart necessary in all cases.

As to why the heart is affected in children more often than in adults the author can offer no explanation. Anatomy and physiology give us no theories. The noduli, Jacobi's narrowness of the aorta, and other anatomical points of difference between the child's and the adult's heart have disappeared before the age at which rheumatism is frequent. The

author then argues that the best theory to explain it is that rheumatism is an acute infectious disease and attacks the heart of the child more often on account of the less power of resistance it has. Further, exactly this relation of the heart to acute rheumatism is an argument in favor of its infectious origin. Of forty-five cases of endocarditis in childhood reported by v. Dusch, fifteen were idiopathic, twenty were connected with acute, two with subacute rheumatism and the remainder were complications of outspoken infectious diseases—scarlatina, variola, syphilis congenita. The acute rheumatism, therefore, so far as the heart complication is concerned, would seem to class itself with these acute diseases. Further, the rheumatism especially causes heart complications because its affection especially attacks synovial membranes and because there is so marked a parallelism between synovial membranes and the endocardium. All the darkness which surrounds the development and course of acute rheumatism is not removed by the supposition of a specific virus, but the author claims that not only has the theory good facts for its support, but also it explains more of the symptoms and complications than any other theory which has been offered.

J. F.

**4. Steffen: Unusual Occurrences after Tracheotomy** (*Jahrbch. f. Kindhlkde.*, XIX. B., 1 H.).—Case I. was in a boy of two years. The operation was performed with no especial difficulty except considerable hemorrhage, but after the tube was inserted the respiration did not seem to be free. It appeared as if the tube was not in the trachea. The face became more and more livid and swollen and in about ten hours the child died. At the autopsy almost the entire right lung was found anæmic and empty of air and compressed against the spinal column. At the apex was a small spot of bronchitis. The left lung was slightly edematous. Pharynx and esophagus free. Diphtheritic membrane in larynx and trachea. Diffuse emphysema of the peritracheal and mediastinal connective tissue, beginning at the wound and extending to the bifurcation of the bronchi. The mediastinal pleura was distended and projected in vesicular form into the pleural cavity. Examination showed clearly that the pneumothorax had not come from perforation of the lung, but through a small opening from the mediastinum. It was evident that the trachea had been cut early in the operation and air from this wound had been drawn downward through the connective tissues to such an extent as to compress the lung even before the insertion of the tube, and continued afterward till the lung was slowly compressed.

In case II., tracheotomy was done in a boy of two years for laryngitis crouposa, complicated with diffuse bilateral bronchitis. The case progressed very favorably for six days, when the canula was changed. Five days later, on removing the canula, the wound was seen to be covered with diphtheritic membrane which was easily removed with the forceps and the canula reinserted. The child did not breathe freely and the canula was removed. Even then the respiration was not very free. On the following days a diffuse pneumonia of the whole left lower lobe developed, with high fever, etc. The fever yielded to quinine and the pneumonia ran a favorable course and the child was discharged cured, the wound having meantime healed. The pneumonia was probably caused by the inhalation of some particle of the loosened membrane, and the case shows that even bronchitis or pneumonia are not absolute contraindications to the performance of tracheotomy.

J. F.

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ORIGINAL COMMUNICATIONS.

THE IMPROVED CESAREAN SECTION,  
CONTAINING THE DESCRIPTION OF A KYPHOTIC PELVIS.

BY

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Obstetric Surgeon to the New York Maternity Hospital.

With four woodcuts.

WHEN it becomes our duty to deliver one of those unfortunate women who are far advanced in pregnancy, and who are so deformed, or have their genital canal so obstructed that delivery cannot take place at all through the natural passage, or that at least it would highly imperil the patient's life to remove the fetus through this passage, four operations are at our command, viz., gastro-elytrotomy, the Cesarean section, the utero-ovarian amputation, and the total extirpation of the uterus.

I omit *sympphysiotomy*, not only because it is condemned almost everywhere, for this judgment may have to be reconsidered, but because its latest spokesman, Morisani, of Naples, declares that the indication for it ends where that of Cesarean section begins, viz., *at a conjugate of 67 millimetres (2 $\frac{5}{8}$  inches)*.<sup>1</sup>

<sup>1</sup> In a paper read before the last International Congress in London, and published in *Annales de Gynécologie*, 1881, vol. XVI., p. 440, Morisani states that, between 1868 and 1880, *sympphysiotomy* was performed



I likewise abstain from discussing the question whether *embryotomy* ought to be replaced by Cesarean section, or one of its substitutes.<sup>1</sup>

Taking for granted that one of the four operations has to be performed, I think they ought to present themselves to the mind of the operator in the order in which I have enumerated them, so that the first on the list is to be chosen unless it is contra-indicated; then the next, and so forth to the last.

The *total extirpation of the gravid uterus*, a combination of Freund's and Porro's operation, has only been performed twice, first by Bischoff,<sup>2</sup> in 1879, with an immediately fatal result, and next, with temporary success, by Spencer Wells, in 1881.<sup>3</sup>

fifty times on forty-eight women. In these fifty operations, there were forty recoveries, and forty-one children born alive. They were performed in hospitals, and for very considerable contraction of the pelvis, the conjugate ranging from 81 down to 61 millimetres ( $3\frac{1}{4}$  to less than  $2\frac{1}{2}$  inches). Raffaële has even reported a case operated upon in the beginning of the eighth month by Morisani, in which the conjugate measured only 55 mm. ( $2\frac{1}{4}$  inches). The patient was discharged forty days after the operation, and had no inconvenience in walking (Archiv für Gynäkologie, 1880, vol. IV., p. 487, from Annali di Ostetricia, March, 1880). Since this was written, Dr. Rob. Harris has published a paper on symphysiotomy, in Am. Jour. Med. Sc., Jan., 1883, which bears witness to this author's well-known indefatigable zeal and accuracy in securing information about Cesarean section and its substitutes.

<sup>1</sup>In consequence of the better results obtained, of late, in Cesarean section or its substitutes, many authors advocate their substitution for embryotomy in cases of so-called relative contraction of the pelvis. Parry (Am. J. Med. Sc., April, 1878, p. 323) showed already that craniotomy, in pelvis with a conjugate diameter of  $2\frac{1}{2}$  inches, or less, did not give any better results than Cesarean section. G. E. Walton, of Cincinnati (Centralblatt für Gynäk., vol. II., p. 262, from Cincinnati Clinic, Feb. 2d, 1878), and S. S. Lungren, of Toledo, O. (AM. JOUR. OBST., 1880, vol. XIV., p. 83), in this country; Péan (Arch. de Tocologie, 1880), Radford (Observations on Cesarean section, Craniotomy, and other Obstetric Operations, London, 1880), Eustache (paper read before the International Medical Congress in London, AM. J. OBST., 1881, vol. XIV., p. 944), Meygriez (Opération de Porro, 1880, p. 48) in Europe (quoted from Müller: Der moderne Kaiserschnitt, Berlin, 1882, pp. 48, 49) have all written in favor of Cesarean section in comparison with embryotomy. Harold Williams, of Boston (AM. J. OBST., 1879, vol. XII., p. 23), has even tried to show by statistical research that Cesarean section gives better results than the high forceps operation.

<sup>2</sup>Hegar und Kaltenbach: Operative Gynäkologie, 2d ed., Stuttgart, 1881, p. 414.

<sup>3</sup>Medical Gazette, 1881, pp. 523, 556, and 668. A few months after, there was already a suspicious thickening of the vaginal cicatrix (Sp. Wells: Ovarian and Uterine Tumors, London, 1882, p. 524).

Both patients suffered from carcinoma of the cervix, which would seem to be the only condition in which it might be indicated. Bischoff operated in the thirty-fourth week of pregnancy. The patient died eleven hours after the operation, and at the autopsy one of the ureters was found ligated, and two retroperitoneal glands in a state of carcinomatous degeneration. Spencer Wells' patient was only in the sixth month of pregnancy. The operation is of course very difficult and dangerous, and since even the extirpation of the non-pregnant uterus has given so poor results that it has yet to struggle for a place among the recognized operations, that of the pregnant is not likely to be often imitated.

Of gastro-elytrotomy I have treated in detail in my monograph on that operation.<sup>1</sup>

On the dangers and difficulties met with in Porro's operations, I have made some remarks in the January number of this JOURNAL.<sup>2</sup> The wonderful enthusiasm with which this operation has been received seems to have reached its acme, at least in Germany. Many weighty voices have recently been raised against its right to supplant the Cesarean section. Schroeder<sup>3</sup> says that he cannot look upon Porro's operation as the operation of the future. He regards it only as a transitory method which must be replaced by some modification of the old Cesarean section admitting of a safer prognosis. Hecker<sup>4</sup> says that it causes a mutilation which can only be indicated when no other means answer the purpose. Halbertsma<sup>5</sup> thinks that the old Cesarean section will not only keep its place beside Porro's operations, but in future remain the common operation. Cohnstein<sup>6</sup> says that, even though the Cesarean section performed antiseptically gives rise to the same mortality as Porro's operation, it is more rational, because the mother is not mutilated. Frank<sup>7</sup> takes it to be a retrograde step.

<sup>1</sup>Garrigues: *On Gastro-Elytrotomy*, D. Appleton & Co., New York, 1878.

<sup>2</sup>Garrigues: *Additional Remarks on Gastro-Elytrotomy, with Special Reference to Porro's Operation*. AM. JOUR. OBST., Jan., 1883.

<sup>3</sup>Schroeder: *Lehrbuch der Geburtshülfe*, 6th ed., p. 359, and 7th ed., p. 360, quoted in Säger: *Der Kaiserschnitt*, Leipzig, 1882, p. 64.

<sup>4</sup>Hecker, in *Centralblatt für Gynäkologie*, 1882, No. 10, p. 228.

<sup>5</sup>Halbertsma, in *Centralblatt f. Gyn.*, 1881, No. 5, p. 98.

<sup>6</sup>Cohnstein, in *Centralbl. f. Gyn.*, 1881, No. 12, p. 289.

<sup>7</sup>Frank, in *Centralbl. f. Gyn.*, 1881, No. 21, p. 598.

Sänger<sup>1</sup> would limit its domain to the following cases: First, when drainage through the natural passage is difficult or impossible, *i. e.*, in cases of stenosis or atresia of the vagina, or when a tumor situated outside of this canal compresses it. This indication is not even absolute, since utero-ventral drainage has been used with success by Wallerstein and by Richmond, of Newton, O.<sup>2</sup> Second, pregnancy in the occluded horn of a bicorn uterus; but this is no true Porro operation, since the other parts of the uterus are left behind. Third, supposed infection of the body of the uterus. Fourth, after repeated Cesarean sections. Fifth, perhaps in severe general osteomalacia. In regard to fibroid tumors of the gravid uterus, he thinks that it is counterindicated, except when difficulties arise which cannot be overcome in any other way, which, among forty-three operations, has only happened in the two cases of Storer and of Zweifel.<sup>3</sup> With most vehemence, but from a narrow-minded and silly stand-point, Porro's operation has been denounced by Schlemmer.<sup>4</sup> This irascible author holds that marital intercourse with a woman upon whom Porro's operation has been performed is forbidden by the tenets of the Christian and Jewish religions, and that the surgeon who performs it in Germany in cases where recourse might have been had to Cesarean section, is liable to imprisonment for five years at hard labor, as transgressing the law about depriving an individual of his or her capacity of procreation. Schlemmer admits only two indications for Porro's operation, *viz.*, a degeneration of the soft tissues which would soon lead to death, and atresia of the vagina, or the occlusion of this organ by a growth which prevents lochial discharge. Only six or seven per cent of all known Porro operations fall within this limit.

On the other hand, P. Müller, of Bern, who has so materially improved Porro's operation, has written as able a defense for it as the case would seem to admit. He calls it the modern Cesarean section, which is scarcely justifiable. It is a substitute for the Cesarean operation, and the term modern

<sup>1</sup>L. c., p. 199.

<sup>2</sup>Sänger, l. c., p. 174.

<sup>3</sup>L. c., p. 54.

<sup>4</sup>Schlemmer: *Die Porro-Operation und ihre moralischen Grenzen.* Stuttgart, 1881, p. 25.



Cesarean section ought to be reserved for the old operation performed with all or some of the improvements which we presently will discuss, these latter being merely modifications of an operation the principle of which is to preserve the integrity of the body, while Porro removes organs which are the site of functions of a great physical and moral importance. Müller says<sup>1</sup> that it is not yet proved that any kind of uterine suture will yield as good results as the amputation of the womb, and that the amputation of the uterus is not done in order to sterilize the woman, but in order to remove all the dangers with which this organ threatens the peritoneum. Not only no lochia can find their way into the peritoneal cavity, but no infection can spread from the endometrium through the lymphatics, blood-vessels, tubes, etc. Against the argument that Cesarean section, if surrounded by the same strict antiseptic precautions with which all Porro operations have been performed, may give as good results as the latter, he has only to say that the danger of infection coming from the uterus is so great that it is wiser, as a prophylactic measure, to remove it.

Porro's operation has the advantage over the Cesarean section that it can be performed before the beginning of labor. It is true that even this point has been contested, since it is claimed that the same applies to the Cesarean section, but in this respect I side with the adherents of Porro, and shall come back to this subject when speaking of the Cesarean section. The chief objection to the operation is that, while gastro-elytrotomy and Cesarean section are conservative operations, Porro sacrifices important parts of the body and renders the woman sterile. If it be proved that by this sacrifice we save a greater number of mothers than by any other method, then the operation merits the place which has been given it, and which its defenders claim for it in future. But this is by no means proved yet. All arguments based on the statistics of the Cesarean operation before the introduction of the antiseptic treatment, compared with those of Porro's operation, fall to the ground. Porro's operation entered the field almost at the same time that the antiseptic treatment became generally adopted<sup>2</sup> in abdominal surgery, and since then very few Ce-

<sup>1</sup> P. Müller, l. c., pp. 24, 25, and 29.

<sup>2</sup> Porro's first operation was performed May 21st, 1876.

sarean operations have been performed with the same antiseptic precautions. Since the Cesarean section is conservative in principle, and may be improved in many ways, as proposed by different writers and operators, it is certainly not only justifiable, but wise to try how it will work in its new shape. Let us have a hundred cases of Cesarean section performed with the same skill and treated with the same care that has universally fallen to the lot of the hundred Porro's operations which have been performed by great operators,<sup>1</sup> surrounded by intelligent assistants and by means of the most perfect instruments. Then we can begin to compare the results of the two operations.

The results of Porro's operation, a mortality of fifty-six per cent, brilliant when compared with those of Cesarean section formerly performed in the same hospitals, are not so good by far as those of Cesarean section in country practice and not much better than those of the Cesarean section in general in the United States.<sup>2</sup> But experience has shown for other abdominal operations that strict antisepsis offers almost as good a guarantee for success as country air. We may, therefore, be justified in hoping that the same will hold true in regard to the Cesarean section.

Porro's operation may have its special indications, as where the outlet for the lochial flow is blocked up, or when the uterus has suffered much by the vain efforts of natural labor or unsuccessful attempts at delivery, or when the fetus has become decomposed; but it ought not to become the general operation instead of Cesarean section before its superiority in results is proved. Nay, even then it is not applicable in all cases, especially those where a large tumor is situated in the cervix.

In spite of the antiseptic treatment, many Porro patients have succumbed to septic processes, wherefore Müller's argument in favor of the amputation loses much of its weight.

The immediate shock produced on the organism must decidedly be greater by the amputation of the uterus and the removal of the ovaries than by a simple incision in the uterine

<sup>1</sup> According to a letter from Dr. Harris, dated February 2d, there had in all been performed one hundred and eight or one hundred and ten "so-called Porro operations." Forty-nine patients recovered, which leaves the mortality, as stated above, at about fifty-six per cent.

<sup>2</sup> Harris in *AM. JOURN. OBST.*, 1880, vol. XIV., p. 343.

wall and its closure by suture. The patient whose history presently will be detailed would in all probability have died on the table if she had been submitted to Porro's operation.

This operation requires also numerous skilful assistants. I doubt that many who have read the detailed descriptions of the difficulties which have actually been met with in Porro's operation, and which are summed up in my above-mentioned paper, will agree with Müller<sup>1</sup> that neither a subtle technique nor special instruments are needed. "Every physician," says he, "owns an Esmarch tube and a pocket case. If we add two long needles, such as are found in every house as so-called darning needles, I have enumerated everything that is necessary for a Porro operation." Most general practitioners who have to operate without any skilled assistance or perhaps with the aid of a single fellow-practitioner, will probably prefer the Cesarean section, on account of its simplicity, to all other operations.

When a short time ago I had to make the choice of the operation which seemed most suitable to the case presently to be reported, I first decided to perform gastro-elytrotomy, but when the patient had a severe ante-partum hemorrhage which caused the death of the child and reduced her already low vitality to a minimum, I changed my mind and adopted the second operation on the list. It was certain that the patient would be unable to go through the suppuration of gastro-elytrotomy, while Cesarean section, if she did not lose much blood, might still give her a chance to prolong her miserable existence. At that time I had scarcely read any of the new publications on Cesarean section to which I refer in this paper. Now I would probably act differently in some particulars. At the time, I was only guided by general surgical principles. From reading histories of autopsies after Cesarean sections in which no sutures had been inserted into the uterus, and the wound was found gaping and the peritoneal cavity filled with blood, I had concluded years ago that it was best to close the uterine wound. Since this organ is subjected to alternate contractions and relaxations, and contains a highly phlogogenic fluid, I placed the sutures nearer to one another than in the

<sup>1</sup> L. c., p. 27.



abdominal wall, and remembering that Spencer Wells<sup>1</sup> had found the serous surfaces of the peritoneum united in patients who had died twenty-four hours after ovariectomies, I tried to bring as large surfaces of this membrane as possible in contact by placing a separate peritoneal suture between two and two of the deep sutures, and drawing it well together while an assistant adjusted the edges with two tenacula. The perfect condition in which the wound and the sutures were found at the autopsy, proved the efficacy of this part of the treatment.

*CASE.—Lumbo-sacral kyphotic pelvis. Caries of the lowest three lumbar vertebræ and the sacrum. Synostosis of the left sacro-iliac joint. Old pelvic abscesses. Contraction of left knee, talipes equinus of left foot. Scrofulosis. Remnants after old pleuritis and phthisis. Morbus cordis. Ascites. Acute catarrhal cystitis and vaginitis. Intertrigo. Ante-partum hemorrhage. Cesarean section. Child dead before operation. Mother died fifty hours after. Primary union of sutured wound.*

C. R., æt. 30, born in the United States, single, was admitted to Maternity Hospital September 9th, 1882 with the following history. When four years old, her spine became affected with Pott's disease, and at the same time she had large abscesses behind the left ear and on the left side of the neck, the cicatrices of which remain. She was often bedridden until her twelfth year when a brace was applied, which she wore until two years ago, when the left hip became affected. She was treated for seven months for "hip disease" in Bellevue Hospital, which she left December 24th, 1881. Three years ago she had a severe hemoptysis and lost half a pint of blood. When she left the hospital she was menstruating. As to her menstruation in January she is uncertain. The first coition took place toward the end of that month. Quickening occurred in the early part of July.

*Physical examination.*—She measures 4 ft. 10½ inches. She is kyphotic having a curvature in the lumbo-sacral part of the column. The spinous processes from the dorso-lumbar synchondrosis to the end of the coccyx form one convex curve, the most prominent part of which is situated at the lumbo-sacral synchondrosis. From this point the sacrum and coccyx slope forwards and downwards. The distance from the anterior superior spine of the ilium to the external malleolus is 33 inches on the left side and 33¾ inches on the right side. Her left leg can be stretched and adducted almost normally in the hip-joint, but can only be bent and abducted very little on account of the pain caused by these movements. She is very sensitive to pressure in the inguinal furrow and on the trochanter major. There has never been any fistula anywhere. When she lies down so as to bring the thigh in contact with the couch, her vertebral column becomes so arched that an arm is easily passed under her spine. Both thighs have the same

<sup>1</sup> Sp. Wells: *Diseases of the Ovaries*, London, 1872, p. 384.

circumference (18 inches on the level of the vulva). The skin in the neighborhood of the inguinal fold is the seat of suppurating intertrigo. The left knee is bent at an angle of  $135^{\circ}$ . The foot is stretched, the heel drawn up, and the toes much bent against the back of the foot. She cannot walk without crutches, and the only parts which touch the ground are the toes and the heads of the metatarsal bones.

The vulva is very small. There is no appreciable distance between the meatus urinarius and the vaginal orifice, the two being only separated by a thin membrane. The vagina admits with difficulty two fingers. In the transverse diameter of the pelvic outlet they have to be crossed so as to present only the width of one finger and a half. All the internal measures appeared at the time much smaller than they were found later, when the soft parts had been removed. Examined through the infantile vulva and the crowded soft tissues, the pelvic outlet seemed to form a narrow, irregular ellipsis, measuring one and a quarter by two and a quarter inches. The immovable coccyx was in direct contact with the tubero-sacral ligament on the right side, while the space between it and the left ligament admitted only one finger. The anterior surface of the sacrum was felt convex and knotty. A finger is easily hooked up from the vagina over the horizontal ramus of the pubic bone, which has the normal shape. The upper part of the vagina has normal dimensions and dilatability. No presenting part is felt. By pushing two fingers deeply upward and forward, the cervix is felt as a soft cone one-half to three-quarters of an inch long. The os is closed. The fetus is in cross presentation. By external palpation, the head is felt in the left flank. The fundus is one inch above the umbilicus. The fetal heart is heard to the right and a little below the umbilicus. The right side of the abdomen is tender on pressure.

The percussion of the chest is clear in front; behind a little dull. Mucous râles are heard in the left infrascapular, right mammary, and hypochondriac regions. She coughs a little. The respiration is short—33 per minute.

The urine taken with catheter is turbid, acid, full of bladder epithelium, and young cells, no casts or kidney epithelium. The filtered urine contains a little albumen. In the vagina is found an abundant purulent secretion.

Dr. W. R. Gillette, one of my colleagues, having examined the patient himself, agreed with me that gastro-elytrotomy was indicated in the case, but thought the patient had no chance to survive any operation on account of her miserable physical condition, especially that of her lungs.

She was placed on a water-bed and received proper treatment for her manifold ailments, with the result of curing the intertrigo, the vaginitis, and cystitis, and relieving the pectoral symptoms. Nevertheless she was so weak that she rarely came out of her bed and only for half an hour at a time. She was almost constantly harassed by vomiting, usually accompanied by severe pain in the abdomen, and uterine contractions without any effect on the os.

These conditions were more or less successfully combated by the administration of opiates, hypodermically or in enema, hydrocyanic acid, bismuth, carbonic acid water, cracked ice, mustard plaster, etc. Her appetite at best was very poor, and from time to time she had to be fed by means of nutritious and stimulating enemas. Several times she raised blood-streaked mucus. The pulse was mostly normal, and the temperature never rose above  $99\frac{1}{2}^{\circ}$  F. Her cheeks became even a little fuller, but were the seat of a hectic flush.

The fetus changed position so as to present by the vertex, in consequence of which the os uteri moved backward to the centre of the pelvis.

On October 5th, the patient passed a very comfortable day without vomiting or pain.

On October 6th, 1 A.M., she had a sudden vaginal hemorrhage, the quantity of blood lost being estimated by the house surgeon from twelve to sixteen ounces. The os admitted the index as far as the root of the nail. She complained of severe bearing-down pains, and had attacks of vomiting every few minutes. She was very pale and sunken from shock. At 4.30 A.M. the os had the size of a silver quarter. The head was felt through the membranes. The back of the fetus was turned forward and to the left. True labor pains were present. As there was considerable oozing, the vagina was tamponed by the resident obstetrician. The fetal heart and movement which had been very distinct were heard no more after the occurrence of the hemorrhage. At 7.30, during a paroxysm of vomiting, the tampon, which, on account of the narrowness of the parts, was difficult to apply, was expelled, and a slight hemorrhage followed. The os had the size of a silver half-dollar, and strong rhythmical labor pains were present. When I saw her at 9.45 the os was fully dilated, the membranes ruptured, the patient very weak and suffering, lips blue, hands and face cold, pulse 124. My colleague, Dr. P. F. Mundé, having examined her, thought that it might be possible to remove the fetus piecemeal through the vagina, but that it would be a very difficult, tedious, and dangerous operation. He agreed with me that she would be unable to stand the suppuration consequent on gastro-elytrotomy; that it would not be advisable to expose her to the shock and dangers of Porro's operation, and that, under the circumstances, the Cesarean section gave her the best possible chance.

*Operation.*—The bladder and rectum having been emptied, the abdominal wall cleansed and disinfected with soap, ether, and two-per-cent carbolized water, and the vagina syringed with the same solution, the patient was put under the influence of chloroform, this being preferred to ether on account of the lungs. The operation was performed with the assistance of Drs. Mundé, Pierson, Breese, Priest, Collyer, and Rhea. An incision five inches long was made in the linea alba, extending two inches above and three inches below the umbilicus. When the peritoneum was incised, six ounces of a brownish-yellow fluid poured out. The uterus was incised



in what, at the time, presented itself as the median line, to about the same extent as the abdominal wall, leaving the fundus and the lower part of the body untouched. Very little blood was lost; not more than in an average normal delivery. The membranes were ruptured, and a female child was withdrawn by the legs without any difficulty. It was dead and flaccid. It weighed six pounds six ounces, and was twenty inches long. The placenta had been attached to the posterior wall, but was found loose in the uterine cavity. The membranes were adherent, but were peeled off without difficulty. The bleeding was quite moderate, except from a couple of sinuses, and here it was controlled by a Kœberlé's pressure forceps. The uterus contracted well, but the wound gaped, and its edges bevelled inward, the outer parts being farther separated than the inner; 3 i. of fluid extract of ergot was given hypodermically. The uterine cavity was carefully cleansed with sponges. The edges were united by twenty-four silk sutures, one-half of which went through the whole thickness of the uterine wall, while the other half only embraced the peritoneum. The abdominal cavity was cleansed with sponges on sponge-holders, but contained very little blood. Next, the edges of the abdominal wall were united with ten silver sutures extending through the whole thickness, and twelve silk sutures through the skin only.

The instruments were kept in four-per-cent carbolyzed water. The sponges were immersed in the same, and later kept in warm two-per-cent solution. The operator and assistants had disinfected their hands and arms in two-per-cent solution. The uterus was washed out with the same after the operation, and a finger-thick rubber tube, with side openings, introduced through the cervical canal up to the fundus, and the outer end cut short on a level with the vulva. The wound was dressed with full Lister dressing, outside of which was placed a thick layer of cotton impregnated with twenty-per-cent borax, and held in place by broad straps of adhesive plaster and a binder. The genitals were covered with borated cotton, and a strip of muslin fastened to the binder. No spray was used. During the operation, she had one ounce of brandy hypodermically, and, after discontinuing the chloroform, she was made to inhale five drops of amyl nitrite. She was replaced in her bed, and surrounded with bottles filled with hot water. She rallied well after the operation, and felt comfortable. Pulse 124. Where the hypodermics had been given, there were large suggillations. The operation took one hour and thirty minutes.

Nine p.m., pulse 136, weak. Face bathed in cold perspiration, hands clammy, very little abdominal pain, some vomiting.

The cotton over the genitals was changed twice a day, the tube shortened twice, respectively one inch and one-half inch. The vagina was syringed with two-per-cent carbolyzed water. Chloral, 3 ss., was injected into the rectum, and the urine drawn with a catheter. There came only seven or eight ounces twice a day. She took a teaspoonful of champagne every fifteen

minutes from the close of the operation till her death. When she complained of any pain, it was subdued with from five to ten minims of Magendie's solution (*i. e.*,  $\frac{1}{8}$  to  $\frac{1}{3}$  gr. of sulphate of morphia).

Oct. 7th, 9 A.M., skin warm. Patient cheerful. Toward evening the respiration became labored, her face had an anxious expression. She was slightly delirious. The pulse could with difficulty be felt at the wrist, and was 140. During the night, she became comatose, and was only kept alive by frequent hypodermic injections of tincture of digitalis, whiskey, ether, and camphor. She was likewise given milk and beef-juice, but vomited everything.

11 A.M. *Transfusion.*  $\frac{3}{4}$  viss. defibrinated blood, obtained from a healthy man, were injected into the medio-cephalic vein of the left arm with the apparatus constructed and described by me in the Transactions of the Obstetrical Society, vol. I., p. 370, and AM. JOUR. OBST., vol. XI., p. 754, which proved entirely satisfactory,<sup>1</sup> but the transfusion had no visible effect on the patient's condition. She continued sinking until she died, at 2.05 P.M.

The following shows the condition of the pulse, the temperature and the respiration, so far as it has been preserved, from immediately before the operation up to the time of her death:

Oct. 6th, 10 A.M., P. 124; 9 P.M., P. 136.

Oct. 7th, 1 A.M., T. 100, R. 32; 6 A.M., P. 140, T. 101 $\frac{3}{4}$ , R. 28; 7.30 A.M., P. 148, T. 102, R. 32; 12.15 P.M., P. 136, T. 102 $\frac{1}{4}$ , R. 24; 2.15 P.M., P. 134, T. 103 $\frac{1}{2}$ , R. 28; 4.15 P.M., P. 140, T. 103 $\frac{3}{4}$ , R. 20; 7.30 P.M., P. 148, T. 102 $\frac{3}{4}$ , R. 32; 10.30 P.M., P. 160.

Oct. 8th, 6 A.M., P. 140, T. 101 $\frac{1}{4}$ , R. 28; 10 A.M., P. 146, T. 101 $\frac{1}{4}$ , R. 36.

*Autopsy*, twenty-four hours after death, by Dr. Maxwell, curator, and myself. The body much decomposed.

*Head* not examined.

*Lungs.* General firm old pleuritic adhesions on the left side, which obliterated the pleural cavity. On the right side, firm adhesions over the upper lobe everywhere and on the lower lobe anteriorly and to the diaphragm. The left lung was moderately compressed from the pleuritic adhesions, otherwise normal. At the right apex were several cretaceous bodies, surrounding which was a moderate amount of pigmented fibroid induration, slight hypostatic congestion of the lower lobes.

*Heart.* The pericardial cavity contained from four to six drachms of blood-stained fluid. The heart weighed 7 $\frac{3}{4}$  ounces. It was flabby and nearly empty. A small yellow clot was found on the right side, and trace of one on the left. The muscular tissue was more yellow than normal, and both ventricles were ap-

<sup>1</sup> The same apparatus answered recently an excellent purpose in saving a man poisoned by the inhalation of illuminating gas (see New York Med. Journ., March 3d, 1883, vol. xxxvii., No. 9, p. 232).

parently dilated. The wall of the left ventricle was one-half of an inch thick. Mitral valve normal. At aortic valve fusion of right and left leaflets for the distance of a quarter of an inch, at which point there was a cretaceous deposit. Two or three patches of endarteritis.

*Abdomen.* *Liver, kidneys and spleen* were too far decomposed to be of any pathological importance. The bowels were distended with gas. The abdominal cavity contained two ounces of reddish-brown fluid. The vessels of the abdominal wall and intestines were a little injected. No peritonitis. The wound in the abdominal wall was found united by first intention. The sutures on the peritoneal side were covered with a fine membrane of incapsulating new-formed tissue.

The uterus was found inclined toward the right side, so that two-thirds of the transverse diameter fell on the right side of the body and one-third on the left. It measured six inches in length by four and a half inches in width. The incision was found on the right side of the uterus, seven-eighths of an inch from the upper end of the right round ligament, from which point it descended perpendicularly in the direction of the os. Ovaries and tubes were normal. There was no trace of inflammation in the pelvis nor on the outer surface of the uterus. The uterus was cut open on the posterior wall. It was found empty and its tissue normal. The uterine sutures were found as they had been placed, only nearer to one another in consequence of the shrinking of the organ. The peritoneum and outer two-thirds of the muscular tissue were found agglutinated by first intention, the inner third, nearest the decidua, had not united. On the peritoneum the line of incision was to a great extent covered with a fine layer of new-formed tissue.

On the inside of the left iliac bone, near the sacro-iliac joint, was found a white, soft, putty-like mass as large as a goose-egg, which was inclosed in a fibrous sac, and could be followed up to the lower end of the lumbar column. A small amount of the same material was found in front of the right ilio-sacral joint, and was connected inward with a hard calcareous mass which formed the large knobs on the anterior surface of the sacrum felt during the patient's life-time, and went deep into the bone.

A later examination of the prepared pelvis revealed that the two lower foramina intervertebralia on the left side had disappeared, and that they were of diminutive dimensions on the right side. Herefrom we must infer that the two lower lumbar nerves passing through these apertures had been destroyed on the former, and were atrophic on the latter. Since these two trunks carry a large part of the fibres forming the nerves of the lower extremity, we can imagine the sufferings of the poor woman while this destruction was going on, and account for the weakness of both her legs and the contraction of the left, although this latter also may be due to the large abscess lying under the psoas and iliacus muscles on this side.

The fluid found in the pericardium may have been old and due



to hydrops, exactly as we found considerable ascitic fluid at the time of the operation. The fluid found in the peritoneal cavity at the autopsy was evidently peritoneal secretion tinged with bloody serum which had oozed from the edges of the wound.

A few circumstances were in favor of the patient, such as the early operation, the foregoing of any attempts at delivery in another way, a fair amount of antiseptic precautions, excellent assistance, and the careful closure of the uterine wound resulting in union by the first intention. But all these advantages were more than counterbalanced by the miserable constitution and condition of the patient, and by the performance of the operation in a large, insufficiently heated ward of a hospital in which we constantly have more or less septic diseases.

(To be continued.)

## THE TOPOGRAPHICAL RELATIONS OF THE FEMALE PELVIC ORGANS.

BY

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(Part II., with eight woodcuts.)

*Points of special Interest pertaining to the Vagina.*—Both the anterior and posterior walls of the vagina are triangular in shape, the base of the triangle being above. They are united at their sides.

Note that in sagittal pelvic sections, the anterior wall appears almost straight, while the posterior wall presents curves which vary with the distention of the rectum, the position of the uterus, the amount of traction upon the vagina by the sacro-uterine ligaments, and the tonicity of the pelvic floor. Distention of the bladder may also create an alteration of the vaginal axis, on account of a backward displacement of the uterus which is thus created.

Most of the cuts in anatomical and gynecological works represent the vagina as an open tube—a gross error which is now universally acknowledged, but which is repeated, in order, as it were, to let the student *see* the vagina. Hart humor-

ously remarks, in discussing this point, "It is no more necessary to figure the vaginal walls always apart, than it would be to always sketch a man with his mouth open in order to render it visible."

If the finger be passed to the lateral aspect of the fornix of the vagina in the nulliparous woman, it will lie in contact with the *base of the broad ligament* of the uterus—a point which may often be useful in diagnosis.

In the genu-pectoral posture, the vaginal walls tend to separate as soon as air is admitted by the introduction of the finger or a speculum. This fact, which is also true of the semi-prone posture, explains the utility of the Sims' speculum, as well as that of other modifications of the same. In addition to this alteration from the normal state of the vagina, there will be noticed, as a result of this posture, a marked increase in the length of the walls of the tube, an approximation of the anterior wall to the posterior aspect of the symphysis pubis, and a similar displacement of the posterior wall of the vagina toward the cavity of the sacrum.

The sphincter vaginæ muscle consists chiefly of pubo-coccygeal fibres of the levator ani muscle. There is no anatomical basis for the belief that the bulbo-cavernosi muscles exert an influence upon the vagina; hence the name "sphincter vaginæ" is improperly applied to them (see article by author on the Female Perineum, *N. Y. Med. Jour.*, August, 1882).

Pressure made upon the posterior vaginal wall in the region of the fornix vaginæ, so as to carry it toward the sacrum, tends to increase the anteversion of the uterus, provided that organ be not retroflexed. If the fundus be fixed, the state of retroflexion of the womb is increased by pressure made at the fornix vaginæ in the antero-posterior axis. If pressure be made in the anterior portion of the fornix vaginæ, the tendency of the force so applied is to draw the cervix forward and to rotate the normal uterus backward, unless the organ happen to be flexed; in the latter condition, the flexion is not apparently modified. The effects of traction thus made upon the vaginal walls are most apparent when the patient is in the Sims' posture. These experiments are of value as tending to prove that no vaginal pessary is capable of relieving anterior or posterior flexions of

the uterus, because the body of the organ is only acted upon in an indirect way through its union with the cervix.

The relations of posture of the patient to examination and treatment is thus summarized by Hart and Barbour:

"The *side-lateral*, where the patient lies upon her side in the ordinary way, is convenient for vaginal examination; passage of Fergusson's, Neugebauer's, or Cusco's speculum; passage of the sound or catheter.

"The *dorsal posture* is imperative for abdominal examination and the bi-manual.

"The *semi prone* is the best posture for the passage of Sims' speculum; vesico vaginal fistula operation.

"The *lithotomy posture* is especially valuable for operations on the perineum, vaginal walls, cervix, and uterus.

"The *genu-pectoral posture* is useful for replacement of the retroverted uterus."

Pawlick, of Vienna, has pointed out that the *genu-pectoral posture* is useful in catheterization of the ureters. His method will be described later.

The vagina derives its blood-supply from the hypogastric, uterine, vesical, and pudendal arteries. During gestation, the pulsations of the uterine artery may usually be felt through the vaginal walls at its upper portion. This is considered by most authorities as a valuable inferential sign of that condition.

The vagina is inclosed by a plexus of veins that are destitute of valves, and which anastomose freely with the veins of the perineum, and also with the plexuses which surround the neighboring pelvic viscera. The absence of valves renders venous stasis apparent in the vagina, as evidenced by a deep purple color of the mucous lining, when pressure from any source impedes the return circulation. Jacquemin and Kluge have urged that this peculiar color of the vagina (compared by them to wine-lees) be included among the early symptoms of pregnancy, because it is commonly produced by the pressure created by the descent of the gravid uterus in the early months. It may, however, be present in prolapse of the uterus, pelvic tumors, etc. The free communication of the vaginal veins with those of neighboring organs, and the contiguous perineal structures, renders a disturbance in any one of these parts



liable to a simultaneous disturbance in the circulation of the others.

The vaginal walls occasionally become prolapsed. This is more common during pregnancy, because a marked hypertrophy of the vaginal walls exists at that time. It may also be due to causes which impair the normal tonicity of the anterior vaginal wall or the sacro-uterine ligaments. As a consequence of prolapse of the vagina, a displacement of the uterus and bladder from their normal relations is almost unavoidable. Some authors claim that the mucous coat may be prolapsed, independently of the other coats of the vagina.

The great distensibility of the vagina should not be overlooked in plugging it, as the functions of the bladder and rectum may be seriously embarrassed by pressure.

Cystic tumors, apparently connected with the vagina, are often produced by distention of urethral follicles.

Preternatural dilatation of the vaginal orifice leads, sooner or later, to vaginal invagination or prolapse of the uterus.

Destruction of the "perineal body" leads to vaginal and rectal prolapse and subsequent uterine displacements.

Opening of pelvic abscesses through the vaginal walls is sometimes associated with fatal hemorrhage.

The whole thickness of the vaginal tissues may be accidentally removed during surgical procedures for the relief of cysto-vaginocele and recto-vaginocele; because the points where such protrusions are most common are situated where the vaginal walls are scarcely more than two lines in thickness, and they may possibly be much attenuated. Huguier has demonstrated, however, that this mistake has little if any danger, and forms rather an integral part of the success of the operation devised by him.

**THE RECTUM.**—This organ, situated between the vagina and the anterior surfaces of the sacrum and coccyx, should next engage our attention in studying the topography of the pelvic organs. It does not lie in the median line of the pelvis for its whole extent, being deflected, in its upper portion, toward the left side.<sup>1</sup> It is not sufficient, therefore, for the thorough study

<sup>1</sup> The rectum extends from the left sacro-iliac synchondrosis to the anus. Its first portion curves downward, backward, and inward to the level of the third sacral vertebra and is completely invested with peritoneum. About three inches from the vaginal orifice, the peritoneum

of its topographical relations that an antero-posterior median section of the pelvic structures be alone examined. Yet, as this particular section is the most important of any of the pelvis because it affords the most satisfactory view of the topographical relations of the various organs to each other, it seems particularly desirable that it should be correctly represented—a desideratum not often found. Most of the cuts incorporated in the works of the greater anatomists, and, I regret to say, also in those dealing exclusively with the gynecological department, represent the rectum as piercing the muscular structures of the female pelvic floor obliquely and reaching to the skin; while the anus is usually depicted as open, affording no apparent obstacle during life to the escape of its contents. It certainly needs no lengthy argument to convince any thinking mind that this cannot be, and is not, the normal state of the rectum during life. If the finger be passed into that canal of the female in the erect posture, it will be found that the sphincters create no slight resistance to the act. It will also be perceived, if the observations of others agree with my own, that the thickness of the pelvic floor in this region is about one inch (rather in excess of than under it); and that the anal canal perforates the muscular structures which form the pelvic floor in a direction nearly vertical, but slightly forward of the vertical line rather than behind it.<sup>1</sup> This canal will be found to open into a closed cavity (the lower part of the rectum), because the walls of the tube are compressed from the sides as shown in the cut of Henle (Fig. 3). The direction of the axis of this cavity will compel the finger to be now passed almost directly backward toward the sacrum. The lower part of the rectum is found to be empty, as a rule, because the feces are commonly retained higher up, until the act of defecation is demanded.<sup>2</sup> The great breadth of the rectum, which appears in all antero-posterior median sections of the pelvis, is to be explained rather by its method of collapse (the long axis of the lumen being parallel with the plane of the section) than by any leaves the walls of the rectum to form the anterior layer of Douglas' pouch.

<sup>1</sup> Hart and Barbour put it as forming a right angle with the vaginal axis.

<sup>2</sup> Extreme distention of the rectum may cause the vaginal axis to be displaced forward so far as to be almost vertical.

misconceived idea that it is a distended tube, as the shading in most of the cuts published would seem to justify. From the internal opening of the anal canal to a point which corresponds to the level of the os uteri externum, the rectum runs backward and slightly upward; here a constriction may be detected which is described by Luschka as "the third sphincter of the rectum," although Nélaton was probably the first to apply the name and describe the existence of such a muscle. In an excellent article by Kelsey upon this anatomical feature of the rectal canal, the literature is exhaustively reviewed, and the probable nature of this constriction as well as its physiological functions are ably stated. Whether this so called "third sphincter" consists of a muscle or of folds of mucous membrane, and whether it possesses any definite situation and attachments in either case, seems to be a matter of controversy between such eminent authors as Sappey, Hyrtl, Velpeau, Nélaton, Pétrequin, Houston, O'Beirne, Chadwick, and many others who have investigated the subject. To discuss the pros and cons of this matter, or to enter into the physiology of the act of defecation with sufficient minuteness to explain the views advanced as to the probable mechanism of this constriction, would exceed the limits of this article. The reader is referred to the bibliography appended to it for more definite information, and especially to the article of Kelsey, where all the views are contrasted.

Hart, of Edinburgh, has lately advanced some ideas concerning the method of collapse of the rectal walls which seem to me to be fallacious. He states that there is absolute proof that the rectum collapses, like the vagina, by an approximation of the anterior and posterior walls, as the result of intra-abdominal pressure. The proof which he adduces is a clinical one, viz., that vaginal pessaries would otherwise be forced out during the efforts of defecation. Now this is just what does occasionally occur when the perineum has suffered laceration, or is in a state of subinvolution; and Henle's cut (Fig. 3) points clearly to an approximation of the lateral walls. I do not believe that intra-abdominal pressure has anything to do with the collapse of the lumen of the rectum. There is elastic tissue enough in the sub-peritoneal portion of the pelvis to act as lines of traction upon both the vagina and rectum



(Savage and others); and the upper wall of the vagina, assisted by the sacro-uterine ligaments, is capable of resisting all ordinary pressure from above. The views of Hart himself would seem to sustain this latter objection. Again, the valves of Houston would seem to be a natural barrier to the effects of intra-abdominal pressure upon the contents of that portion of the rectum which lies below them.

The author quoted above believes that the valves of Houston assist in preventing eversion of the mucous membrane of the rectum, by the contraction of sphincter-like fibres during the act of defecation, while they assist at the same time in the expulsion of fæces.

It may be stated, I think, with an approach to accuracy, that a constriction does exist in the rectum at a point situated about four inches distant from the anus,<sup>1</sup> and that feces are seldom found in the portion of the rectum which lies below this constriction. The condition, which I believe exists most commonly, as tending to explain this constriction which may be appreciated during life, is the presence of two or three folds of mucous membrane which overlap each other like valves. These were believed by Houston, who first described them, to be so placed as to act as a mechanical arrangement to prevent the feces from forcing their way to the neighborhood of the anus where their presence would create a desire to defecate. The investigations of Rosswinkle, Hyrtl, Henle, Sappey, and Kohlrausch,<sup>2</sup> sustain the investigations of Houston, as regards the existence of these valves, although they differ among themselves as to the number present and their exact seat.

The fact that distention of the lower part of the rectum with feces may modify the position of the uterus, and also crowd the upper two-thirds of the vagina forwards, is well recognized by all gynecologists. I am inclined to argue, however, that marked displacements of the uterus from this cause

<sup>1</sup> Other valve-like forms exist, at about one and a half inches from the anal canal; and, in the vicinity of the sacral promontory, oblique folds are very apparent, as a rule.

<sup>2</sup> This most excellent monograph, which is most rare, shows a superbly prepared section of a frozen corpse reproduced by an entirely novel process. The valves of the rectum are fortunately made very apparent. I am indebted to Dr. Bullard, of New York, for the use of his copy. Few, if any, reproductions of this plate give a proper conception of its beauty.

are less common than are usually supposed; because the accumulation of fecal matter is normally above the point of constriction in the rectum, while the lower part of that tube is usually empty except during the act of defecation.

The close proximity of the rectum to the posterior vaginal wall and the uterus, coupled with the fact that this tube possesses a high degree of distensibility, has brought rectal exploration into prominence as one of the means of determining the existing conditions of the vagina, uterus, ovaries, the rectum itself, and even of the kidneys. Prof. Simon, of Heidelberg, has done much to bring this step before the notice of the profession. The constriction spoken of as existing in the rectum does not seem to seriously interfere with the introduction of the fingers beyond it, after the hand has been introduced through the dilated anus. The uterus can be drawn down easily within the complete grasp of the fingers when necessary, after the hand has been thus introduced within the rectum, and small tumors of the fundus can often be detected by this procedure. Rectal exploration is not entirely devoid of danger to the patient; and a serious objection to its use is that the hand of the explorer (unless it be extremely small) is frequently so compressed by the rectal walls, that freedom of motion of the fingers is greatly interfered with. Frequent examinations of this character are liable to result in laceration of the walls of the rectum, and a permanent paralysis of the sphincter muscles of the anus may also be induced. The later works upon gynecology mention fatal results which have followed this procedure; hence it is one which should be resorted to only in cases of extreme necessity.

The *sacro-uterine ligaments* (folds of Douglas), which have been referred to as one of the possible factors in assisting the anterior vaginal wall to support the uterus, pass around the rectum upon either side, in order to bind the structures with which they are intimately connected in front—the muscular fibres of the anterior vaginal wall, and the uterus itself—to the second bone of the sacrum.<sup>1</sup> This point can be best studied from a superior view of the pelvis and its organs. The con-

<sup>1</sup>During gestation, the points of bony attachment of these ligaments rise gradually until they reach the level of the sacral promontory.

struction of these ligaments has been referred to in a previous page.

The rectum is incompletely invested with peritoneum at its upper part; the middle portion is only partially covered, the peritoneum gradually passing from the posterior surface and sides of the tube; the lower portion has the pouch of Douglas interposed between it and the vagina. This pouch will be described later.

*Points of special interest pertaining to the rectum.*—The close proximity of the rectum to the uterus, vagina, pouch of

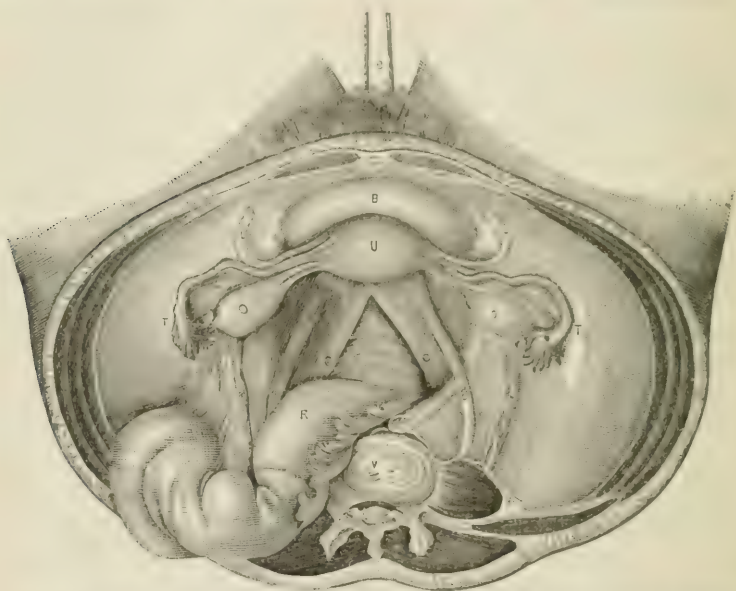


FIG. 7.—Superior view of the pelvis and its organs (Savage). B, bladder; U, uterus drawn down by vulsellum; T, Fallopian tubes; O, ovary; R, rectum; V, sacrum; C, sacro-uterine ligaments; L, round ligaments; g, ureter; e, loop attached to uterus; a, spermatic vessels, often prominent under their peritoneal covering.

Douglas, broad ligaments, and ovaries renders it a valuable means of perfecting diagnosis. In addition to Simon's method of rectal exploration, less severe and dangerous steps are often employed. These may be enumerated as follows: (1) Digital touch; (2) conjoined recto-vaginal touch; (3) abdomino-rectal method; (4) abdomino-recto-vaginal method.

In all of these procedures, the rectum should be first emptied by an enema. In some cases, a purgative should precede



the enema; being administered at night, previous to the proposed examination.

The simpler method (*digital touch*) is commonly employed in the virgin. It is useful in detecting hemorrhoids, fissures, rectal stricture, rectal polypi, ulcers, and malignant growths. The cervix can be felt through the anterior wall of the rectum. This may be mistaken for the body of the uterus on account of its apparent length—since it seems longer than the more common vaginal touch would lead an inexperienced examiner to suspect. The normal ovaries may be felt, as small oval-shaped bodies which are tender to pressure, by pushing the finger high up against the lateral walls of the rectum. A retroverted uterus may often be completely examined. In cases of marked acute flexion, the finger may sometimes detect the angle of flexion, and feel the fundus passing forward from it. Abdominal pressure greatly assists the finger in the rectum in detecting abnormalities of the uterus.

The  *volsella*  may be employed with advantage in connection with rectal exploration. This instrument has a decided advantage over abdominal pressure in cases where the walls of the abdomen are rigid. In this way, the mobility of the uterus may be determined; the utero-sacral ligaments can be felt as tense cords if involved in cicatricial tissue; the posterior surface of the uterus can be felt; the presence of fibroid tumors may be diagnosed; the ovaries are made more accessible; and, finally, the length of the uterus can be accurately determined.

The *recto-vaginal* method is performed by passing two adjoining fingers (the first and second are preferable) simultaneously into the vagina and rectum. In this way, the anterior wall of the rectum and the posterior wall of the vagina are included between the fingers. It may be used conjointly with abdominal pressure (the *abdomino-recto-vaginal* method). It is useful in the detection of retroversions, antelexions, prolapsed ovaries, tumors of the rectal or vaginal walls, circumscribed effusions of blood etc.

Finally, injections of air into the rectum will distend it at high as the sigmoid flexure, and often prove a valuable adjunct to rectal exploration by any of the methods previously described.

The “perineal body” prevents pouching of the anterior

wall of the rectum. It may also assist in deflecting the feces through the anal canal, whose axis forms a right angle with that of the rectum when the sphincters are contracted. Thomas attributes to this body the function of a support to both the anterior rectal and posterior vaginal walls (see previous pages of this article).

The levator ani muscle has the following physiological attributes: 1. It strengthens the deep sphincter of the rectum. 2. It helps to restore the inversion of the rectal mucous membrane after the act of defecation is accomplished. 3. It supports and raises the rectum and pelvic floor by means of fibres which are closely intermingled with the external sphincter muscle of the anus and the longitudinal fibres of the rectum. 4. It acts on the tip of the coccyx, which it tends to draw forward, and thus to increase its curvature. 5. It is enabled to sustain pressure in excess of its apparent strength by the toughness and elasticity of the recto-vesical and levator ani fasciæ, between which its fibres are placed. 6. It is the physiological antagonist to the diaphragm. 7. It acts as a sphincter muscle to the vaginal orifice by its longitudinal and sling-like fibres, and, possibly, compresses the urethra.

The longitudinal fibres of the rectum act from a fixed point below. Their contraction probably tends, therefore, to create an eversion of the mucous lining of the rectum during the act of defecation, and to bring the axis of the rectum more into the line of the anal canal.

The act of defecation is probably preceded by a marked relaxation of the levator ani and the sphincter muscles.

THE UTERUS.—Some points pertaining to the topographical relations of this organ have already been alluded to, in connection with the vagina and rectum; yet much remains that is not as yet positively settled, and which must continue, of necessity, to remain so, until the profession is sufficiently alive to the importance of the subject to undertake more extensive observations upon the living woman. Among those who have devoted special attention to the normal position of the uterus and its relations may be mentioned Schultze, Martin, Fritsch, Van de Warker, and Foster, each of whom has studied this subject upon the living female; while Panas, Aran, Scanzoni, Courty, Follin, Derneuil, Depaul, Goupil, and many others

have contributed to the literature of this organ, especially as to the *attitude* which the organ assumes in the majority of subjects. If a comparison be made between the cuts found in most of the modern text-books, and the frozen sections of Braune, Heitzmann, Fürst, Hart, Kohlrausch, and many others,<sup>1</sup> it will be evident that the normal position and attitude of the uterus is still in dispute. Schultze describes in detail his method of making observations during life to determine this point, which is certainly ingenious;<sup>2</sup> and Foster also publishes a drawing of an instrument made by him for the purpose of determining the normal direction of the uterine canal. The latter author (Foster), in addition, has devised a series of measurements which will enable an observer to place the os externum in its proper relations to the surrounding organs and pelvic outlines, in preparing a schematic drawing of any individual case. The monograph of Martin, on the contrary, fails to give the details of his method of observation; hence his deductions<sup>3</sup> are of less value than those of Schultze and Foster, as their accuracy cannot be verified properly without following the method employed by him, provided it is free from apparent sources of error.

The cuts found in the works of Gray and Savage, and many other anatomists, who have relied exclusively upon dissection as a means of ascertaining the normal position and attitude of the uterus, are so markedly in error (if the frozen sections of authors previously quoted be taken as a more reliable standard), that some of them are absolutely without value. If any reader desires to convince himself of this fact, let him compare the rela-

<sup>1</sup> Hart and Barbour have lately reproduced most of the best sections in their late work, "Manual of Gynecology," New York, 1881.

<sup>2</sup> Regarding Schultze's method, Dr. H. J. Garrigues, in a recent paper, comments as follows: "Such experiments would be absolutely impossible in this country. Our conscience, as well as fear of a suit for malpractice, and probably manslaughter, would restrain the physician, and not even the poorest woman in a charity hospital would submit to having a board pressed against her abdomen, sounds introduced into uterus and bladder, staves hooked to her womb, and being made to stand up and lie down at the command of the explorer. Besides, I do not think these methods are necessary. A guillotine, regulated by clock-work, is not needed for chopping wood."

<sup>3</sup> This paper was published posthumously. It is probable that it would have been more complete if the author had personally supervised its publication.



tive position of the tip of the coccyx with the plane of the lower border of the symphysis pubis in the cuts of these authors. The former point should lie at least one-half an inch higher than the latter in the standing posture. With a defect such as exists in the drawings of the anatomists named, how can a cut prove of value to a student of the normal topography of the pelvic viscera? If the cervix is placed in its proper relation to the lower border of the symphysis pubis in such a drawing, it is distorted in its relations to the sacrum, and vice versa. It is certainly time to discard many of the cuts which are being perpetuated by incorporation in our popular text-books; and I would call the attention of authors to this defect which is so commonly repeated as to seriously impair the usefulness of their work. Even if a drawing be designed purely for a diagrammatic purpose, there is no excuse for the incorporation of so gross an error that may mislead the reader in his conception of surrounding parts—which the cut, perhaps, is not intended to show, but which it nevertheless represents incorrectly. The criticism made, however, is not upon cuts which are designated as diagrammatic, but upon those which are apparently intended to be actual representations of the parts, as revealed by dissection. In Savage's drawing of the sagittal section of the pelvis, not only are the bony parts distorted (as specified in a foot-note on a previous page), but the rectal walls are represented as nearly one-half the thickness of the uterus, the anterior vaginal wall below the urethra as even thicker than the womb itself, the anterior lip of the cervix as the longer, and the vagina as an open tube.

The objection which I would make to the method devised by Foster, and the same is true to a less extent of that employed by Schultze, is that the direction of the canal of the *cervix only* is determined, rather than that of both the cervix and the body of the uterus. In the cut which Foster publishes, as representing what his researches have led him to believe is correct, the canal of the cervix and that of the body of the uterus have the same direction; and it is the rule to find the same error made in almost all of the drawings, which have been incorporated in the later works upon gynecology.<sup>1</sup> I deem

<sup>1</sup> Fritsch puts the angle formed by the cervix and body of the uterus at 90°. Schultze considers that the anterior surface of the uterus lies

it to be an error, because the prevalent opinion which exists in the minds of those who have devoted the most time to the determination of the normal attitude of the uterus is decidedly in favor of a *slight degree of ante flexion*. In the exhaustive review of this subject by Panas, who himself examined 114 young or adult women, the opinions of Scanzoni, Boullard, Follin, Dernenil, Aran, Goupil, and others, are brought forward to support his statement that ante flexion must be considered the normal position of the organ in the unimpregnated, and nulliparous female. In his own researches, he found that the number of straight canals, as compared with that of the ante flexed womb, was about on an equality; but Goupil found that 41 out of 115 cases presented the condition of ante flexion and Aran two-thirds of the number examined by himself. In the total number of 333 cases, collected from reliable sources, Panas demonstrates that, while all attitudes of the uterus were at times discovered, the largest proportion of cases favored the view that ante flexion to a moderate degree must be considered the normal one; the unbent organ, which is considered by many as the only physiological one, being found in but one-third of the total number. He also concludes that the uterus probably tends to become straight with growth, after the age of puberty.

Regarding this deduction, I am aware that the following objections may be made: 1. That no post-mortem results are an infallible guide in establishing the position or posture of an organ which is capable of marked displacement during life. Some might even go so far as to assert that this method of research is absolutely without value, as a basis of deduction. 2. That normal uteri are uncommon, and that abnormalities in position and posture are more often observed than would seem, at a first glance, to exist in young subjects who have been free during life from apparent uterine disorders and the effects of pregnancy. 3. That conjoined or bimanual palpation was not practised when many of the earlier deductions as to the normal posture of the uterus were first given to the profession. 4. That the condition termed "flexion" is a misnomer if applied to very slight curvatures of the canal. 5. That no deductions as to nearly parallel with the anterior wall of the vagina when the bladder is empty. Few observers coincide with these extreme views.

the normal posture of the womb can be considered as reliable and worthy of credence unless all these elements of error can be shown to have been anticipated and guarded against by the investigator, and a sufficient number of experiments recorded to warrant positive conclusions.

In answer to these criticisms, a reply might be made (1) that post-mortem examinations of young nulliparous women, free from suspicion of existing uterine disease, is far more reliable as a means of determining the direction of the uterine canal than it might be for the solution of problems in topographical anatomy. The healthy organ is not so weak in structure as to bend of its own weight after death to an extent requisite to insure a permanent distortion after its removal from the pelvis. 2. That bimanual examination is not a reliable method to determine the point at issue, as the pressure required to bring the uterus within the sense of touch is liable to be a cause in producing its displacement. 3. That the methods employed during life by the observers mentioned (Schultze, Fritsch, Martin) are not altogether free from sources of error; and that the results obtained seem to demonstrate their fallacy, since few clinical observers accord with the deductions. 4. That post-mortem examinations are probably the most reliable means of determining the existence of morbid processes—excelling all the revelations given to us by the senses of touch or sight during life.

The view that ante flexion is the normal posture of the uterus is sustained, moreover, by most of the frozen sections of the female pelvis, which have been prepared with extreme care;<sup>1</sup> although, as has been stated in a previous page, these frozen sections are not an infallible guide in studying disputed points in the topography of the pelvic viscera. The extent of ante flexion found in some of these frozen sections is far greater than I believe to be normal; since it is enough to apparently impede the normal freedom of escape of the menstrual flow or the introduction of a uterine sound. Schultze concluded that the normal attitude of the uterus was that of anteversion, and the majority of authors seem to agree with him in that apparently erroneous statement. All authorities, however, concur in

<sup>1</sup> See the plates in Kohlrausch, Le Gendre, Pirogoff, Beigel, Simpson, Hart and others.



the opinion that the condition of the bladder modifies the posture of the uterus as well as the direction of the vaginal axis; and it should be said that the statements quoted above refer to the condition present when the bladder is empty. As the bladder becomes distended, the uterus is affected by the interposition of a tumor between it and the anterior wall of the pelvis; most authors attributing to it the power of creating a tendency toward a backward displacement of the uterus. An ingenious suggestion has been advanced by Joseph, in antagonism to all previously accepted ideas regarding this point, viz., that as the bladder becomes distended, it requires more peritoneum to cover it than when empty, that it derives this excess

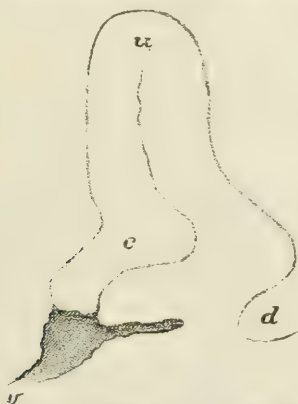


FIG. 8.—A sketch illustrative of the attitude of the virgin uterus, as revealed in some of the frozen sections of the pelvis (traced from Hart—Plate No. 1). It is evidently a distortion of the normal posture.

u, Body of uterus; c, Cervix; v, Vagina; d, Cul-de-Sac of Douglas.

of peritoneal covering from the anterior portion of the body of the uterus; and, that, above a certain level, the peritoneum refuses to leave the uterus, is rendered tense by the enlarging bladder, and actually becomes a tractor upon the uterus tending the pull it forward. My own investigations have convinced me that the attachments of the peritoneum to the uterus are more firm in front than upon the posterior surface of the organ; but I am not yet convinced that this theory of Joseph can be sustained by clinical investigation or experiment upon the cadaver, however ingenious it may appear, although the plate of Kohlrausch may possibly be brought forward in its support (Fig. 51 of Hart and Barbour. Wood's edition, New York, 1883).

Whether the bladder be full or empty, there is reason to believe that the body of the uterus is seldom thrown so far forward as to allow of the descent of the intestines into the pouch of Douglas when the woman stands erect.<sup>1</sup> If anteflexion be accepted as the normal posture of the uterus, the degree of curvature of the uterine canal must, to my mind, be considered as much less than that depicted in most of the frozen sections. The beautiful plate of Kohlrausch, in which the bladder is represented as distended, was prepared from a frozen section with every possible precaution against error in depicting the normal topography of the pelvic viscera; it shows the uterus in a slightly anteflexed posture, thus apparently sustaining the deductions of Panas. The direction of the canal of the cervix is represented as nearly vertical, while that of the body of the uterus forms an angle of about thirty degrees with the vertical line. Copies of this plate are usually inaccurate.

A superior view of the pelvic viscera shows certain points in the topographical relations of the uterus which are not appreciated in an antero-posterior median section of the pelvis. It will be seen from this view that the uterus and its broad ligaments form a partition which extends transversely across the pelvic cavity; dividing it into a large anterior portion (which reveals the situation of the bladder, the round ligaments, and the utero-vesical ligaments), and a smaller posterior portion (which contains the rectum, the pouch of Douglas, and the sacro-uterine ligaments). The peritoneum, which is spread over the pelvic viscera like a sheet (dipping down between them and assisting to form the utero-vesical, broad, and sacro-uterine ligaments), often conceals the outline of the ovaries in looking into the pelvis from above. The diagrammatic representation of Hodge shows the general arrangement of the parts, as viewed from above, better than any with which I am acquainted. The broad ligaments are placed by him further forward than in most cuts of the pelvic brim, and I am inclined to believe, from my own observations, that they are correctly drawn. The investigations of my friend Professor Polk, who has studied this subject with great care upon a number of females of different ages, confirms the statement of Hodge that

<sup>1</sup> Hart and Barbour dispute this statement, but acknowledge that it is sustained by most authorities (page 41, Wood's edition).

the attachment of the broad ligaments to the wall of the pelvis is situated in the nulliparous and unimpregnated female along a vertical line which extends between the great sciatic notch and the obturator foramen, and not as far back as the sacro-iliac synchondrosis, as is stated by some authors. The investigations of Polk seem also to demonstrate that the point of attachment of these ligaments changes during the pregnant state, and more nearly approaches the sacro-iliac synchondrosis

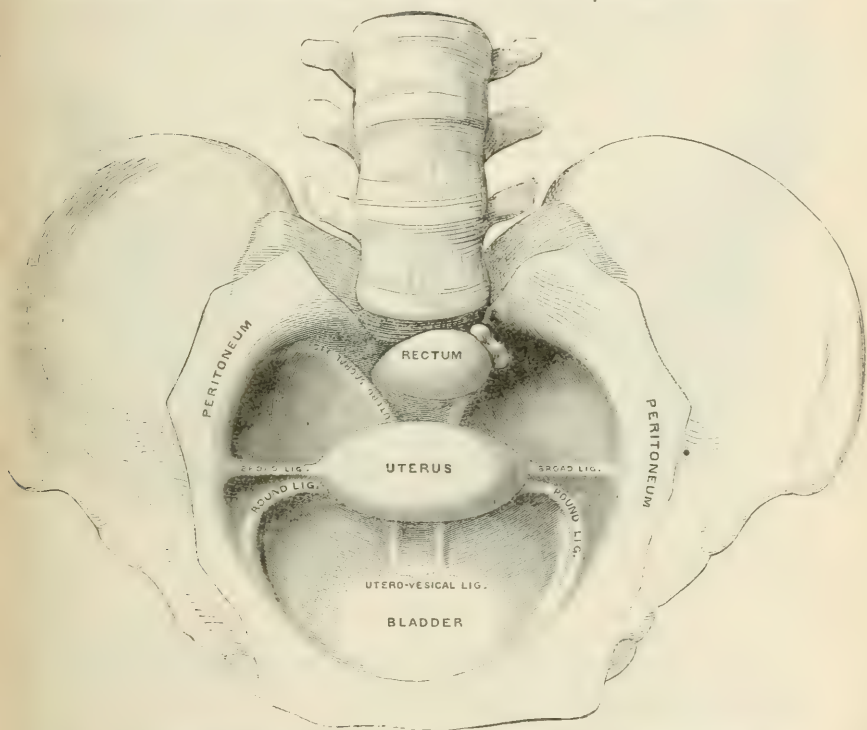


FIG. 9.—A diagrammatic superior view of the female pelvis, showing the reflections of the pelvic peritoneum (Hodge).

at full term.<sup>1</sup> The peritoneum is seen, in this diagrammatic cut of Hodge's, as a thin sheet which is tucked (to use a homely expression) between the rectum, uterus, and bladder, and whose folds are prominent in the region of the various ligaments connected with the uterus. A second diagram by the same author,

<sup>1</sup> Hart and Barbour state that the peritoneum is stripped off from the bladder during pregnancy. The broad ligaments become nearly vertical at full term.



representing a posterior view of the uterus and its ligaments, may well be studied in connection with that of the superior view; since both will help to convey a more complete conception of the relations of the uterus to the reflections of the peritoneum and the rectum. This drawing shows the Fallopian tubes and the ovaries lying in relation with the uterus and the broad ligaments; and the pouch of Douglas (the lowest point in the peritoneal cavity), extending between the uterus and the rectum, and reaching down below the point of attachment of the

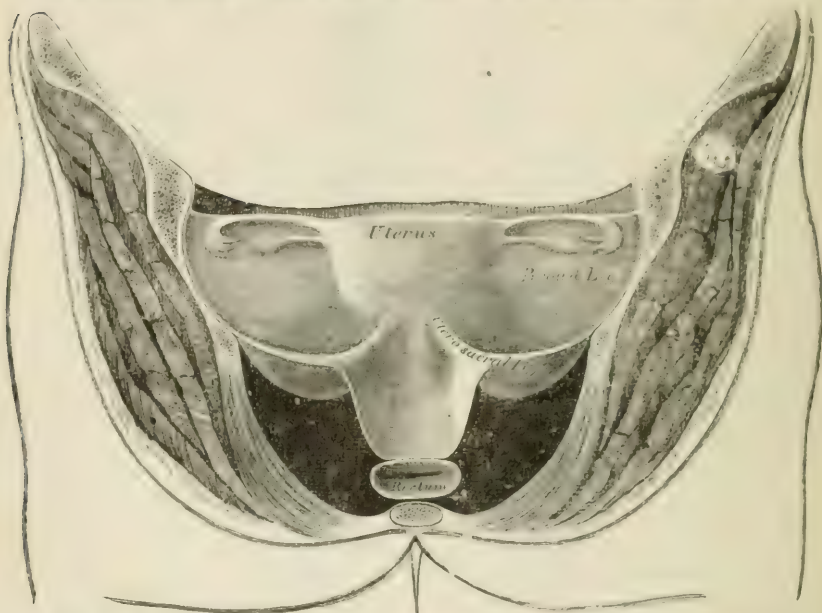


FIG. 10.—A partly-diagrammatic transverse vertical section of the female pelvis, showing the relative situation of the peritoneal and subperitoneal pelvic spaces, and the pouch of Douglas (Hodge). The ovaries and Fallopian tubes are not represented in accordance with the views of the author.

vagina to the uterus.<sup>1</sup> This reflection of the peritoneum can be studied best, as regards its relations to the uterus, vagina, and rectum, in the pictorial representations of antero-posterior median sections of the pelvis given in previous pages. The sacro-uterine ligaments which have been referred to as forming a part of the upper segment of the pelvic floor are also shown

<sup>1</sup> This pouch varies in its depth. It may extend 3 cm. ( $1\frac{1}{4}$  inches) upon the posterior wall of the vagina. It usually covers only 12 mm. of the vagina. In one frozen section, it extended almost to the extreme limits of the vagina (Pirogoff).

in this diagram, diverging to reach their sacral attachments; the intervening space being filled by the rectum, as is apparent in Figs. 7 and 9. Finally, this diagram shows that the peritoneum of the pelvis does not extend downward as far as the level of the pelvic floor, a space (darkly shaded in the cut) being left, called the "sub-peritoneal" space, in which are situated the lower portion of the rectum, the vagina, a part of the uterus, the ovaries, the bladder, urethra, and ureters, and a mass of cellular tissue, blood-vessels, lymphatics, nerves, and elastic and muscular fibres. In fact, all of the pelvic organs are placed underneath the pelvic peritoneum; although the fundus of the uterus rises above the plane of the bladder when that organ is empty, and thus appears to be more completely enveloped by the peritoneum than the contiguous bladder, or the rectum which lies behind it. The elasticity of this peritoneal covering seems to be enormous. In spite of the immense size that the uterus, bladder, and ovaries sometimes attain, the attachments of the peritoneum are but slightly disturbed in proportion to its great distention. The experiment of Savage, who tied the urethra and injected the bladder through the ureters in order to simulate the natural method of its expansion, demonstrated to his mind that the pubo-vesical pouch of peritoneum was not appreciably raised. This elasticity is evidenced to a still greater degree by the fact (which seems to be well proven, both by clinical observations and frozen sections of the pelvis), viz., that the pouch of Douglas is not raised to any marked extent even at the full term of pregnancy.

The fundus of the normal uterus does not usually extend much above the level of the plane of the brim of the pelvis in the corpse; although the entire organ<sup>1</sup> surmounts that plane, which passes horizontally from the upper border of the symphysis pubis. I am inclined to believe that the deduction of Sappey that the fundus normally lies three-quarters of an inch below the plane of the pelvic brim is not true in the living subject. My researches convince me that the fundus should be placed slightly above that plane, in any schematic drawing of the pelvic viscera in an antero-posterior median section.

<sup>1</sup> This statement I believe to be correct. Almost every section of the frozen subject will sustain this view, as can be tested by any reader who is in doubt concerning it.

The non-pregnant, pregnant, and even the fetal uterus shows a normal inclination toward the right side, and the same deflection has been proved to exist in the uterus after the preg-

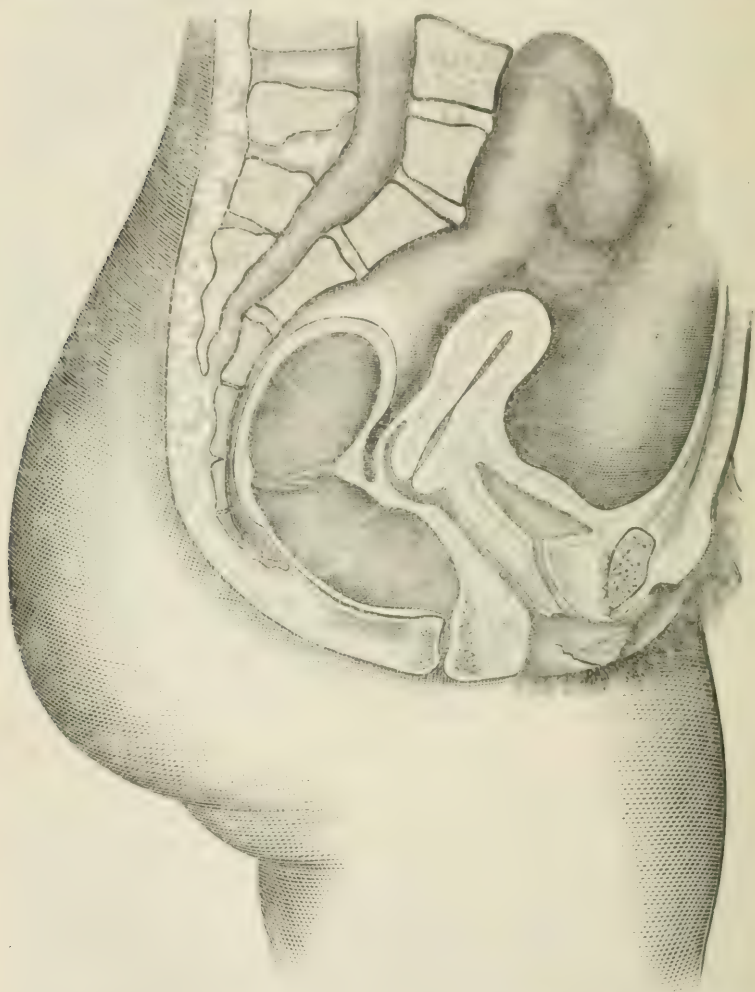


FIG. 11.—The author's schematic drawing of the sagittal section of the female pelvis and its organs.

The uterus is not flexed in the cut quite to the extent shown in the author's original drawing. The degree of flexion shown in Fig. 1 is about correct, according to his views.

nant state by Pfannkuch. This is not usually shown in the cuts made to represent the view of the pelvis from above.



Now, let us compare the cut which I offer to the profession with one devised by Thomas (Fig. 43 of "Dis. of Women") which he considers to be an accurate conception of these parts. We shall see in the latter that the tip of the coccyx is so much out of its normal relation to the symphysis as to lie apparently some inches below its proper level; that the cervix touches the horizontal plane passing through the lower border of the symphysis; that the internal orifice of the urethra appears to be much below its proper level; that the rectum appears as a round tube cut open, rather than as a flat section of a collapsed canal; that the anal canal (one inch long) is absent; that the uterus is straight; and that the meatus urinarius is at least twice as far from the symphysis as it should be. Again, if contrasted with the drawing of Savage ("Female Pelvic Organs," plate XIII. of Wood's edition), the same error in regard to the relative position of the tip of the coccyx to the symphysis exists; the sacral canal is invested for its entire length by bone; the symphysis is excessively deep; the urethral meatus lies far below the level of the symphysis; the ostium vaginæ is below the plane of the meatus urinarius; the anal canal is absent; the anus is patulous, and the rectum incorrectly shaded; the anterior vaginal wall is thicker than the uterus; the entire bladder (moderately distended) lies below the plane of the upper border of the symphysis; the uterus is intersected by the same plane in the region of its fundus, when it should pass below the level of the cervix; the curve of the nates is erroneous; the angle made by the plane of the superior strait of the pelvis with the vertebral column is incorrect; finally, the plane of the inferior strait shows the point of greatest projection of the soft tissues below it to be at the middle of the labium rather than the region of the anus.

These criticisms may appear to be too positively stated, but they are sustained, I think, by a close analysis of most of the frozen sections hitherto published, as well as by careful measurements made upon the living woman. They are due, to a great extent, to the fact that the artist has distorted the relations of important points in attempting to draw an upright figure from a subject lying upon the back. This, of course, is not the case in a photograph of a frozen section.

*Points of special interest pertaining to the Uterus.*—The

round ligaments of the uterus have been studied in detail by Rainey, who describes them as arising by three tendinous fasciculi—the inner being connected with the tendinous expansions of the internal oblique and transversalis muscles of the abdomen, the middle from the external abdominal ring, and the outer from the neighborhood of Gimbernat's ligament. These three fasciculi unite to form a rounded cord, which passes through the inguinal canal in front of the deep epigastric artery, and then downward and inward between the layers of the broad ligament of the uterus to reach the anterior and upper part of the organ. Some points pertaining to the physiology of these ligaments will be discussed in subsequent pages.

The base of the broad ligament can be reached by the finger when it is crowded against the lateral wall of the fornix vaginæ. This point may be utilized in diagnosis. These ligaments are altered in their relations to other pelvis structures during gestation. This will be discussed later.

There is a large amount of tissue between the layers of the broad ligaments, which is rich in blood-vessels. Sections of the pelvis in the antero-posterior plane show that this tissue is most abundant where the broad ligaments join the uterus, and that it decreases steadily as the pelvic wall is approached.

Horizontal sections, as made by Pirogoff and Ruedinger, show the existence of a loose fatless tissue, abundantly supplied with blood-vessels and lymphatics, which invests the lower part of the uterus and the upper part of the vagina. This is the "parametric tissue" of Virchow, which has been described also by Spiegelberg. It averages about two centimetres in thickness. Ruedinger's plate is reproduced by Hart and Barbour, where it can be studied by the reader.

Clinical observation has led almost all gynecologists to accept the gross inaccuracy of a retroverted uterus as its normal posture, in spite of the drawings of Luschka, Cruveilhier, Henle, Braune, and others. To what extent the uterus tilts forward during life, it is perhaps impossible to ever decide positively, as the method employed by Schultze would appear to antevert the organ unduly and bimanual palpation would also tend to do the same. All frozen, spirit-hardened, and chromic acid preparations have sources of error which cannot be eliminated. These have been pointed out in previous pages. Fos-

ter's method only determines the direction of the axis of the cervix. The subject has, however, been discussed in preceding pages.

The uterus, when normally situated, and the bladder move together, according as the varying degrees of distention of the latter compel movement.

In the genu-pectoral posture, the relations of the uterus, vagina, bladder and pelvic peritoneum are materially modified.

By digital pressure the uterus can be raised about one inch and a half. It can be drawn downward by the volsella to the ostium vaginae without endangering its return to its proper position in the pelvis. It is extremely mobile in the antero-posterior and lateral planes—its ligaments not being tense in any direction.

The *volsella* enables the gynecologist to make an accurate diagnosis of all abnormal conditions of the cervix; it increases the scope of rectal exploration; it is of use in almost every form of surgical procedure upon the uterus; it helps to establish suspected attachments of the uterus to tumors of the abdomen; it aids in the replacement of the gravid or non-gravid retroverted uterus; it simplifies the introduction of tents; finally, it is indispensable in operations for the repair of lacerations of the cervix, amputation of the vaginal portion of the cervix, and the removal of the uterus through the vagina for malignant disease.

Many points pertaining to the ligaments of the uterus will be found incorporated in those pages which treat of the pelvic peritoneum, the pelvic cellular tissue, and the ovaries.

If the broad ligament of the uterus be held up to the light, the parovarium or organ of Rosenmüller may be seen between the ovary and the ampulla of the Fallopian tube. These bodies are occasionally the seat of degeneration, producing the cystic tumors of the broad ligament known as parovarian.

The course of the Fallopian tube within the cavity of the broad ligament is commonly compared to that of a shepherd's crook. From my own dissections, I am inclined to regard its course as comparable to a "surcingle" to the ovary. This view is supported by some of the later observations of Tait, Doran, and others. When positively settled, it will have a



tendency to shed much light upon the diagnosis of tubal cysts and tubal pregnancy in their early stages.

The structure of the mucous lining of the uterus (although in no way connected with its topographical relations) opens up fields for investigation, respecting its glands, epithelium, its menstrual changes, and its functions during gestation.

It is important to note that horizontal sections of the pelvis show marked variations in the uterus, since the shape of that organ changes with the altitude of the section. Farre has given diagrams to illustrate this point, in his contribution to the *Cyclopedia of Anatomy*, which have been incorporated by Hart and Barbour in their late work.

The relative position of the uterus, and its annexa, to adjacent parts in the neighborhood of the pelvic brim, has been studied, through their peritoneal covering, by Hasse of Breslau, who froze a subject and then lifted out with great care the soft viscera without disturbing the pelvic contents. The drawing which he was thus enabled to prepare has been copied by Hart and Barbour. A coronal section of Ruedinger's, and a drawing of Schultze's have also been utilized by the same authors to show the various views of the same.

The extreme mobility of the uterus allows of almost incessant change in position during life. Among the more important factors which tend to produce such changes, may be mentioned the acts of respiration, singing, and walking, and all violent muscular efforts, in addition to the mechanical effects of rectal and vesical distention.

Guerin asserts that the cellular tissue of the broad ligaments of the uterus can be demonstrated by means of inflation to be perfectly separate from and independent of all association with that of other parts of the pelvis—a fact which other observers deny. The same author asserts that there is no proof of any special inflammatory affection of these ligaments which can be diagnosed during life.

The sacro-uterine ligaments are rendered prominent as distinct cords (which can be felt through the rectal walls) if the uterus be drawn downward by the volsella.

The vessels of these ligaments may cause troublesome hemorrhage, if injured.

Pregnancy causes an alteration in the height of their sacral

attachments. They are attached nearly on a level with the promontory of the sacrum at the thirty-sixth week of gestation (Polk).

The alteration in the position of the pelvic peritoneum during the pregnant state causes the broad ligaments of the uterus to become markedly changed, in respect to their shape and boundaries, from their normal condition. The upper border of each becomes nearly vertical; the base rises to the level of the pectineal line and becomes greatly increased in its antero-posterior measurement (extending from the pectineal eminence to the sacro-iliac synchondrosis, on account of its reflections from the round ligament and the ovarian artery); finally, its shape becomes triangular, as the result of the widening of its base.

The broad ligament may, and may not, contain the ureter between its laminæ in multiparous subjects. In the virgin and nullipara, the ureter does not lie between its layers (Polk). These variations are due to the tendency of the broad ligaments toward a backward displacement during gestation.

**THE BLADDER.**—The topography of this organ has already been discussed in connection with its influence upon the posture of the uterus, and its physiological connection with the anterior wall of the vagina. These points need not be repeated, as they can be found by referring to previous pages.

The *shape* of the bladder, when collapsed, is differently represented. Henle, in a sagittal section of the pelvis, shows the bladder to be round, small in size and hence probably contracted, and with a distinct cavity which also presents a rounded outline. Braune, in a frozen section, depicts the organ as so completely collapsed as to present scarcely any apparent cavity, and with an outline which is a decided ovoid; but in two woodcuts of sections made by Le Gendre, incorporated in Braune's work, the organ is again represented as round, although apparently collapsed, and as possessing a cavity of nearly a corresponding shape. Pirogoff, in his section made through the antero-posterior diameter of the pelvis in the median line, found a collapsed bladder which was markedly triangular in form and which presented no cavity. Most of the woodcuts in the popular text-books represent the bladder as distended to a greater or less extent; hence they are of no value in determining the

condition which is to be considered as normal to the collapsed organ, even if their accuracy as guides in many other particulars could be relied upon. The wide variations in the appearance of this organ, in those sections of frozen subjects which are presumed to depict it as empty, attracted the attention of Braune; who states that he considers the rounded form as the normal one,<sup>1</sup> and the triangular outline to be the result of decomposition in a subject, who had passed urine just before death and thus caused the walls of the organ to be unsupported. He denies the statement of Claudius, that the uterus is not affected in its posture by the distention of the bladder, and asserts that changes in the attitude of the uterus may be easily detected during life, as the act of micturition is being performed.

Now, as I am inclined to differ from so high an authority as to the normal configuration of this organ when collapsed, I will endeavor to adduce reasons which seem to me to sustain the triangular outline rather than the round. We know in the first place that the bladder is intimately connected to the anterior wall of the vagina (in its lower part), and that cellular tissue and the peritoneum bind it to the anterior wall of the uterus. We also know that the peritoneum is so closely adherent to the anterior surface of the uterus<sup>2</sup> as to be undetachable, and we have apparent reason to believe that slight ante flexion of that organ may be considered its normal posture. In addition to these facts, we are in possession of most positive knowledge that the intestines rest upon the upper part of the bladder and are capable of exerting a downward pressure upon it. Now, from these three facts, the most plausible view would seem to be that the anterior vaginal wall—connected, as it is, to the sacrum indirectly by the uterus and the sacro-uterine ligaments—would tend to act to some extent upon the contiguous bladder as a line of tension; that the uterus, which is displaced by the accumulation of urine, would naturally tend to compress the bladder, as it became emptied, on account of the recoil of the elastic peritoneal covering which is continued from its anterior surface upon the bladder and

<sup>1</sup> Savage also distinctly states this to be his opinion. The frozen section of Heitzmann shows a rounded outline does sometimes exist.

<sup>2</sup> Savage states that the same is true of the peritoneal reflection from the bladder to the anterior wall of the abdomen. This is denied by Hart.



from it to the abdominal wall ; and, finally, that the weight of the intestines above would be in excess of the normal tonicity of the vesical walls, and would therefore assist in producing a close approximation of these walls when the urine had been expelled from the cavity of the organ.

I am inclined to believe that the entrance of the urine into the cavity of the bladder is assisted to some extent by the "piston-like" action of the diaphragm,<sup>1</sup> which tends to draw the abdominal organs upward during expiration ; because its curve becomes greater at that time, and its convex surface projects far into the cavity of the thorax. "Nature abhors a vacuum"—and, as the air is expelled from the lungs, the tendency of all the movable viscera of the abdomen is to rise to fill the space thus made vacant. I do not mean to discard the effect of the downward pressure of the urine in the ureters and renal pelvis and the blood-pressure in the vessels of the kidney as a great force in distending this organ in spite of the weight of the viscera which tend to compress it ; but I think the pressure of the intestines is greater during inspiration than when air is being exhaled, and that the bladder is in a condition which particularly favors the entrance of urine, during expiration. The triangular appearance of the bladder when collapsed is moreover sustained by the sagittal sections of the pelvis made by late authors, among whom may be mentioned Fürst, Schultze, Fritsch, Pirogoff, Waldeyer, Hart, and Beigel ; and the condition found in the plates of these authors will be described as an approach to that which, to my mind, is the normal appearance of this organ when completely emptied.

Hart, of Edinburgh, who has lately come into prominence as an original investigator in female pelvic anatomy, states in recent article that he is inclined to regard the bladder as an organ which is capable of both a *systolic* and *diastolic* action. The former (systole) assists in the expulsion of the accumulated urine from its cavity, aid being likewise furnished by the pressure of the intestines which is exerted at a right angle to the peritoneal surface of the organ. The latter condition (diastole) is brought about in order to aid in the escape of urine from the

<sup>1</sup> The reader is referred to Duncan, Busey, Taylor, Thomas, and the lectures of Prof. Küss for a more detailed statement of this action of the diaphragm.

ureters, the muscular walls exhibiting a state of extreme relaxation. He supports the view that sagittal sections of the bladder reveal the triangular form in many instances, although he also believes that the anterior and posterior walls of the organ may be brought in contact and thus produce a form which is convex upon its peritoneal surface. He states that the method of folding of the walls of the collapsed bladder produces two distinct types of outline of the vesical mucous surface: 1. A curved slit (continuous with the axis of the urethra), when the walls collapse from before backward. 2. An outline which corresponds to the letter Y (the posterior limb being sometimes the shorter), when the upper wall is approximated to the lower.

From our present knowledge, it is impossible to state positively which form of the collapsed bladder is to be considered as the normal type. It is possible and perhaps probable that more than one may exist, and that each bladder may have an individuality in the method of folding of its walls. I am glad, however, to bring the views of Hart before the profession, as confirmatory of my own position, in regard to the triangular outline of the collapsed organ; since the view of Braune would lead to the inference that all organs found with the upper wall in contact with the lower were altered by post-mortem changes.

The base of the vesical triangle (see Fig. 11) seems to correspond with the peritoneal surface of the organ, which presents a direction nearly horizontal. The sides seem to be formed by the folding of the anterior and posterior surfaces of the organ upon themselves. The apex appears to correspond to the situation of the internal opening of the urethra. This is perhaps not in accordance with the usual description,<sup>1</sup> as the appearances differ in almost every sagittal section of the pelvis, but it is sustained by the plates of the authors, quoted as exhibiting a 'triangular section of the collapsed organ. The flattening of the peritoneal surface of the bladder, which presents in some sections even an indented appearance) would certainly appear to sustain

<sup>1</sup> Some authors describe the situation of the base and apex of this triangle differently. But, as the sides of the triangle appear nearly equal in length, I have selected, as the *base*, that side which appeared to me to be longest in the majority of frozen sections. When the Y-shaped bladder (diastolic organ of Hart) is found, the base of the triangle has become indented.

my view of the importance of intestinal pressure as a factor in creating this mode of collapse.

The bladder is bound to the upper part of the anterior wall of the vagina by loose connective tissue;<sup>1</sup> the surface of the organ, which is so attached, having (as Garrigues described it) the shape of a heart. The boundaries of this heart-shaped space

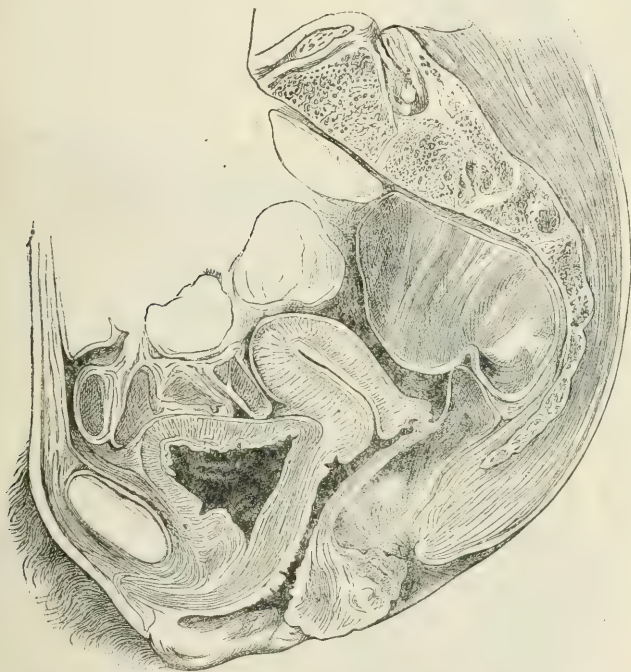


FIG. 12.—Sagittal frozen section of the female pelvis (Waldeyer). This section appears to justify the view that relaxation of the anterior wall of the vagina has allowed the bladder to sag, thus distorting the relations of the urethral openings to the symphysis pubis. It sustains the view, however, that the bladder collapses in a triangular form.

are as follows: the anterior or lower limit runs parallel with, and slightly external to, the boundary line of the “trigonum vesicale;” the upper limit follows the outline of the limits of vagina, and crosses over the cervix of the uterus. It is in this region that the ureters have the most intimate relation to the

In the upper part of the vagina, the vesico-uterine pouch of peritoneum approximates is so closely as to render operative procedures in this locality liable to a serious complication.



bladder and vagina. The distance from the internal opening of the urethra to the cervix uteri has been carefully measured

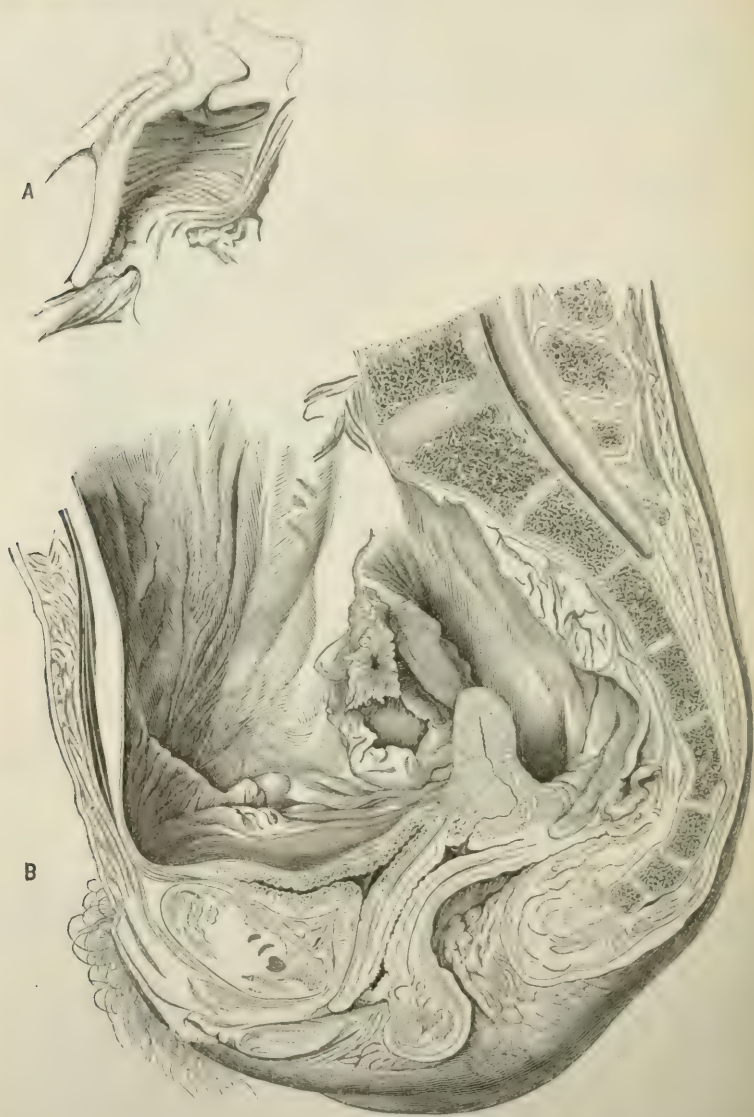


FIG. 13.—Sagittal frozen section of the female pelvis (Hart). A, fornix of the vagina and the cervix uteri, enlarged from B. Note the shape of the collapsed bladder; the form of the perineal body; the extreme flexion of the uterus; and finally, the relations of the bladder, uterus, and urethral openings to the several planes of the pelvis.

by Garrigues, who states it as 3.2 cm. (one inch and a quarter); while the same authority places the extent to which the bladder overlaps the cervix uteri at 1.5 cm. (about five-eighths of an inch).

The bladder is normally smaller in its vertical diameter in the female than in the male, but is wider. In children it is conical, and points higher in the abdomen when moderately distended than in the adult, as the organ lies above the plane of the pelvic brim. In the adult, the bladder, when excessively distended, may reach almost to the level of the umbilicus; but, when collapsed, it lies normally below the plane of the brim of the pelvis, and completely behind the pubes. The collapsed bladder may sometimes be felt in the living subject by conjoined manipulation. The attachment of the organ to the pubes by areolar tissue is less firm than that between it and the uterus and the upper part of the vagina.<sup>1</sup> The capacity of the bladder is usually considered to be greater in the female than in the male. The relation of the internal opening of the urethra to the points of entrance of the ureters will be discussed later. The ureters will be discussed separately in subsequent pages.

*Points of special interest pertaining to the bladder.*—As a summary of previous pages, I would call attention to the following points.

The bladder when empty lies in front of and above the vagina and entirely behind the pubic bone. Its shape, when empty, varies with the condition of the organ, in respect to the tonicity of its walls.

It has three openings; the internal orifice of the urethra and the openings of the ureters. These openings are the landmarks for the division of the organ into three parts, as follows: the body, which includes all above the line which joins the internal openings of the ureters with the centre of the symphysis pubis; the base, which includes all below that plane; the trigone, which comprises that portion bounded by the internal orifice of the urethra and the line connecting the ureteric openings.

A valve-like action is attributed by some authors to a pucker-

<sup>1</sup> The connective-tissue behind the pubes (*retro-pubic fat*) has a *triangular outline* in all sagittal pelvic sections.

ing of the mucous membrane in the region of the neck. It is still a matter of dispute among observers whether the bladder possesses a true sphincter muscle at its neck.

A solid ridge may be detected beneath the mucous coat of the bladder, which connects the two ureters. It was first described by Jurie as the "inter-ureteric ligament."

The alterations in shape of the contracted bladder (as revealed by frozen sections) are to be explained by a systolic and diastolic vesical period. This point has been previously discussed.

In the parturient female, the bladder is drawn above the pubis; and the same displacement may be observed in case the gravid uterus becomes retroverted, since the organ is tilted upward.

Most of the ligamentous attachments of the bladder are formed by the peritoneum. The true ligaments of the organ are derived from the pelvic fascia.

As the bladder becomes distended, the uterus is crowded backward and the utero-rectal pouch of peritoneum is diminished in its antero-posterior measurement. The intestines, which gravitate normally to about the level of the utero-sacral ligaments when the uterus falls forward, are thus forced out of the utero-rectal pouch by the distention of the bladder.

Undue distention of the bladder is considered by some as a possible cause of permanent retroversion of the uterus, especially if that organ be gravid.

The height of the reflection of the peritoneum from the bladder upon the anterior wall of the abdomen is considerably increased by the full distention of that organ. This occurs also (although to a less extent) during advancing gestation, irrespective of the capacity of the bladder, on account of the traction exerted upon the organ as a whole. These points are disputed by Savage. Hart and Barbour sustain them, however, without qualification; and bring frozen sections forward in support of their views.

The *side-lateral* and the *semiprone* posture are best adapted for operations upon the anterior-vaginal wall. The former is often used in passing a sound or catheter; the latter is usually employed in operations for vesico-vaginal fistula. Occasionally,



the *lithotomy* position is employed for operations upon the anterior vaginal wall or the bladder.

The reflection of the peritoneum from the anterior wall of the abdomen upon the empty bladder is about one inch and a half above the symphysis pubis in the genu-pectoral posture. In the erect posture it leaves the abdominal wall at the level of the symphysis.

The angle formed between the urethra and the empty bladder is affected by posture. In the upright attitude, the angle is nearly  $90^{\circ}$ ; in the knee-chest position, no appreciable angle is formed, as they practically form a straight line ( $180^{\circ}$ ).

**THE URETHRA.**—In the lower or anterior portion of the upper wall of the vagina, the vesical structures and the tissues of the urethra are so intimately blended as to be practically inseparable. Blum, who has written one of the best monographs upon the female urethra, found the length of that canal to average about 3 cm.<sup>1</sup> He places the superior orifice or “vesical neck” as behind and slightly higher than the top of the pubic arch. This appears to the author to be an error. The external orifice is placed by him “at about 2 cm. behind the clitoris, a little in front of the tubercle which marks the end of the ‘anterior column of the vagina.’” It is well to remember, however, that the situation of the meatus urinarius varies with the condition of the uterus and bladder, although these variations are not so marked as to possess any great importance. The urethra is separated from the vagina, in its upper part, by a space filled with cellular tissue and numerous veins; and similar structures exist between it and the sub-pubic ligament. It also bears relation with the anterior ligaments of the bladder and the roots of the clitoris. It is connected with the constrictor vaginæ (a part of the levator ani), the compressor urethræ, and the bulbo-cavernosus muscles. The canal is surrounded with a sheath of erectile tissue (*bulb of the urethra*), whose vessels are continuous with those of the vaginal bulbs.

The course of the urethra is given by most authors as straight; and corresponding nearly to a vertical line in the erect posture and to a horizontal line when the woman lies upon the back.

<sup>1</sup> Hart gives it as  $1\frac{3}{8}$  inches, and its direction as parallel to the pelvic brim.

Harts states that its direction is parallel with the plane of the pelvic brim. I am inclined to believe that this is an error. The urethra seems to me to be curved, its concavity looking toward the symphysis pubis whose posterior and inferior portions it encircles. This view is supported by some late investigators, among whom may be mentioned Blum; who states that the distance between the concavity of the urethral curve and the symphysis varies from 8 to 9 mm. The probable cause of this error in description rests in the fact that the internal orifice is displaced, by anything affecting the posture of the uterus to an extent sufficient to pull upon the bladder or vagina, as well as by the simple distention of the bladder itself. It is not to be wondered at, therefore, that Hybord and other investigators, who appear to have failed to properly appreciate this fact, could not state the exact curvature of this canal.

The form of the meatus urinarius varies. Sometimes it is lengthened into an antero-posterior slit; again it may be asterated, or star-like in appearance; finally, it may appear perfectly round.<sup>1</sup> Upon either side of this opening, may be detected a smaller opening (the orifice of one of the so-called *glandulæ vestibulæ minores*) which may be mistaken for the meatus by beginners, in attempting to introduce a catheter. These are two of the small glands of the vestibule, and they may often be employed as a guide to the meatus which is placed between them. Some measurements, possessing a special surgical interest (into which the internal orifice of the urethra enters) will be found in those pages which treat of the normal course and topographical relations of the ureters.

Recently Skene, of Brooklyn, has described two tubular pouches in the female urethra, "lying near to its floor and extending up from the meatus for about three-fourths inch." They lie beneath the mucous membrane, within the muscular wall of the canal.

The question of the existence of true "sphincter muscles" to the urethra is not as yet positively settled.

*Special Points of Interest Pertaining to the Urethra.*—The sphincter muscle of the urethra seems to be partly an erectile

<sup>1</sup> According to Henle, the urethra appears as a sagittal slit on transverse section near to the meatus; a transverse slit near to the bladder; and star-shaped between the two points.

structure. One of the consequences of this is that the conditions of the urethra due to laceration or excessive dilatation, although often recovered from, are liable to leave an incurable form of incontinence of urine.

The operation of *lithotrixy* in the female is more difficult than in the male. This fact is chiefly to be attributed to the poor retentive power of the female organ, which allows the walls of the bladder to become so closely applied to the blades of the instrument as to impair its working capacity.

*Lithotomy* may be performed either through the vagina, the vestibule, or the perineum. If vesico-vaginal lithotomy be performed, the fact that the vesico-vaginal septum becomes diminished in size as the bladder contracts and that the openings of the ureters are to be avoided should impress every surgeon with the dangers of ever making the incision a transverse one. If the vestibular method be thought of, it is important to remember that a calculus of even moderate size will cause laceration of the urethro-vesical sphincters, and that the knife must pass through the *urethro-pubic space*, which warrants serious objections to the operation. The operation of lateral lithotomy (as practised chiefly by Buchanan, of Glasgow) seems to allow of the extraction of calculi of the largest size with few if any serious obstacles. The incision is made in the delicate covering of the inner side of the left labium and the urethra subsequently opened, upon a sound passed within it, where it ceases to be incorporated in the anterior wall of the vagina.

The relations of the ureters to the vesical neck and also to the cervix uteri have important bearings upon the operations for vesico-vaginal fistula, lithotomy, and the removal of the uterus. These tubes will be discussed later.

THE EXTERNAL GENITAL ORGANS.—Something has been said already concerning the extent of projection of the soft parts beyond the plane of the pelvic outlet, and the relative distances of the fourchette, meatus urinarius, and clitoris, from the tip of the coccyx and anus. The vagina and urethra have also been considered in reference to their topographical relations; so that there remains only the component parts of the vulva to be discussed. In the literature of the ancients, as first pointed out by Goodell, the terms *vulva*, *matrix*, and *uterus* are used to designate the genital canal as a whole. The former term is



now employed, however, to designate that portion only which lies external to the hymen, which marks the seat of the external vaginal orifice. The researches of Budin, which have been referred to on a previous page, have thrown light upon the construction of this membrane and have proved that it must no longer be considered as a simple reduplication of the mucous membrane, but as a *continuation of the vagina as a whole*. In treating of the topography of the vulva, the fourchette labia majora, and labia minora (nymphæ) particularly invite a description.



FIG. 14.—A diagram intended to show the relation of the pelvic floor and external genitals to the horizontal plane, in the erect attitude of the female (modified from Garrigues). A-B, horizontal plane; C, clitoris appearing as a bulb between the nymphæ (N); u, the urethra, opening posterior to the nymphæ (this canal is curved during life); V, vaginal orifice pulled somewhat open to show the most common posture and seat of the hymen h when the vagina is closed; R, rectum narrowing into the anal canal (a) as it perforates the pelvic floor; L, labia majora; N, labia minora, or nymphæ; F, fourchette, the dotted line showing its position when the labia are in contact, and the dark line the position when the labia are separated; fn, fossa navicularis formed by fourchette, when the labia are separated; p, line of pelvic floor between anus and rectum; a, anal canal; h, hymen, when vagina is closed.

The *fourchette* consists of a fold of skin which bears a different relation to the surrounding parts when the labia are in contact or separated. When the woman is in the erect, as well as in the supine position, the labia are closely approximated; hence the fourchette bags downward as a loose fold, stretching from one labium to the other, in the region of the so called posterior commissure of the vulva. If we separate the labia, however, it will be seen that the fourchette becomes tense, and gradually advances until its anterior margin reaches the posterior border of the external vaginal orifice. The hollow which exists behind the fourchette, so stretched, is called the "fossa navicularis," from its fancied resemblance to the form of a boat. When the labia are in close approximation, this hollow is wanting. The surface of the fourchette which looks toward the va-

ginal orifice is red in color, moist, and marks the transition which here exists between the skin on its anterior surface and the mucous covering at the base of the inner surface of the nymphæ. This interior surface of the fourchette is continuous with the covering of the interior surface of the labia minora; which, since it possesses minute hairs, is considered as properly belonging to integumentary structures. The boundaries of the fourchette are as follows: above, by its free edge, when put on the stretch by separating the labia majora; below by the attachments of the integumentary fold to the labia and the perineal body. The fossa navicularis has different boundaries. Its upper wall corresponds to the perineal body, continued as far forward as the *ostium vaginæ*; its lower wall is formed by the interior surface of the fourchette, when the labia are separated (thus putting it upon the stretch). The anterior limit of the lower wall corresponds to the free edge of the fourchette. These facts will enable the reader to appreciate the bearing of a criticism of Garrigues upon the prevalent misuse of the terms, which I quote as follows: "when, therefore, a recent author advises to perform episiotomy midway between the fossa navicularis and the fourchette, his advice is as difficult to follow as to make an incision between the lower lip and the mouth." Hart and Barbour make a curious statement, which I deem to be an error, when they say, "When the fourchette is *pulled down* by the finger, a boat-shaped cavity is made—the fossa navicularis."

The diagram, which I have introduced as tending to make clear some of the points in the topography of the vulva, will render the special consideration of the topographical relations of the clitoris unnecessary. The pages which treat of the female perineum will cover any important omissions.

In the nude erect female, only the mons Veneris is seen, the external genitals being hidden by the thighs. The labia majora usually lie in close apposition, and are only separated to a slight degree by extreme divergence of the knees. The nymphæ cannot be made to part by any posture, and have to be artificially opened in order to expose their inner surface. The vulvar slit is vertical and mesial, while that of the vagina is transverse. The ostium vaginæ can be seen only after the labia majora and minora have been separated. The line between skin

and mucous membrane is quite sharply defined in the genital organs of the living female. It extends continuously along the base of the inner surface of each labium minus, the base of the outer aspect of the hymen, and beneath the prepuce of the clitoris.

The labia majora are firm and full in young adults with perfect health; but, in the old or debilitated, they tend to become wrinkled and pendulous from a decrease in their adipose tissue. The term "vulva" was applied by the ancients to the labia from a fancied resemblance to a valve to the vaginal orifice (valva). When the labia are full and rounded, the term "*vulva connivens*" is applied; when they tend to gape from their flaccidity (the subject being in the supine posture), the term "*vulva lians*" is used to designate their condition. The two extremities of the labia are designated by most anatomists as the "*anterior*" and "*posterior commissures of the vulva.*" Luschka has shown that these terms are incorrectly applied since the labia are continuous, in front, with the mons Veneris, and, behind, with the perineal structures.

The *labia minora* are two reddish folds of mucous membrane, which lie between the labia majora, and with whose internal surface they are attached at their outer borders. They are naturally moist, since their covering partakes of some of the characters of a mucous surface, in which respect they differ from the labia majora, although it is classed as skin by most observers. They form a covering for the clitoris, which is analogous to the prepuce of the male, by splitting into two folds which surround that organ, and help to complete the suspensory ligament of the clitoris. In the young virgin, these folds are completely concealed by the labia majora; but, when the vulvar opening gapes, and becomes pendulous, the contact of air causes the labia minora to assume a dirty, bluish color, and to partake of the character of integument. In the Hottentot and Bushman women, these folds often become of excessive length; they may even reach the condition called the "Hottentot apron," where they hang upon the thighs. The nymphæ are supposed to assist in directing the flow of urine, and in bringing the clitoris in close approximation with the penis, as they are separated and forced inward during coition. The "fourchette"



is considered by some anatomists as a direct continuation of these folds.

Scattered hairs are found upon the surface of the labia minora of the adult.

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### CASE OF RUPTURE OF THE PARTURIENT UTERUS. DEATH.

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BY  
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Martinsville, Ind.

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THIS case is reported merely that it may be placed on record, not because it possesses anything of exceptional interest.

I was called to the case after an effort (or efforts, as he had been sent for four different times) had been made to get the family physician who, the messenger said, practised over a large section of country, and had not been found. The assistants did not know anything about such matters, except that they were aware that it was a "cross case, as the arm of the child had been born several hours." I had to drive ten miles, the most of the distance through a rough hilly region over roads worse than none; and I reached the house (a log-cabin in the woods) about twelve o'clock noon, on October 19th, 1882. I found Mrs. N. A. D., a woman of forty years, who had previously given birth to five children, in natural, easy labor. Her face was white and cold, as indeed the surface of the whole body, and she was bathed in a cold sweat, the left wrist was pulseless, the right nearly so, but what little pulse remained, was rapid. She did not seem to be breathing, but on being spoken to answered intelligently. There were no labor-pains; I was informed they had ceased one or two hours before my arrival. The pains had not been sufficiently strong all along during the labor, which had begun some twenty hours before, but not long after the arm of the child had come down, the pains became strong, and after two or three very strong pains, there followed a semblance of two or three slight pains and all contractions ceased. Then the coldness of the surface of the body came on, etc., as I found her. I found the left arm of the child, up to the shoulder, protruding between the woman's thighs, cold and limp; the child was evidently dead, and from the statements of the attendants had been so for several hours. On placing my hand on a prominent protrusion in the left iliac region, the patient evinced great pain, and I was told she had not been able to be touched at that point since the cessation of the contractions.

I found on closer examination (after I had made an examination per vaginam) that the prominence was caused by the head of the child, which could be felt plainly through the walls of the abdomen, although I was unable to make a positive examination on account of the sensitiveness of the parts. The pelvis was sufficiently capacious, perhaps to excess. On passing my finger to make out the position of the child, I found the uterus relaxed and the child's back to the mother's. After explaining the condition of the patient to the friends, I placed her under chloroform, intrusting its further administration to one of the lady attendants who had never seen chloroform administered (as indeed was the case with all the attendants), I passed first two fingers into the relaxed uterus, reached the child's knees and easily drew both legs down and delivered all but the head, which came down with the occiput posterior. After a little effort to deliver the head, and seeing that it would give me some trouble, I put on forceps and completed delivery. The child was mature, and was estimated to weigh about nine pounds. The placenta and a few coagula were found lying loose in the uterus and vagina. On passing the hand, a rent was found in the left side of the uterus, running transversely at what I supposed to be the junction of the body with the cervix, extending from about the median line anteriorly to about the same point posteriorly; the two segments were connected still by the whole right half and by a bridle of tissue at about the middle of the rent. I passed my hand into the abdominal cavity and removed some large clots of blood. The chloroform had been withdrawn on completion of delivery. I had meanwhile held my other hand on the abdomen over the fundus; by steady pressure of this hand and some manipulation of the hand in the uterus, the upper segment contracted down, first on the uninjured side, till it came down into more or less close apposition with the lower, and the fundus reached midway to the umbilicus. A compress was placed above the fundus and a broad binder around the abdomen. The patient soon called for a drink of water, saying she felt so much better. The pulse could now be felt in both wrists with increased volume. She said she had never had any difficulty in former labors. She called for something to eat, saying she had not had anything to eat for forty-eight hours. Such remarks as this on the part of the patient led me to believe that her labor had been going on longer than I had been informed.

As the family physician had been again sent for just before my arrival and was expected during the afternoon, I left a written statement for him as to what kind of case it was, advising precaution first against the present condition of shock, which was evidently improving, and further, on inflammation, also opiates, cool diet, quiet, etc. I directed a dose of morphia to be given as soon as she rallied a little more, and gave the family a general idea of how she should be cared for till their physician arrived. I did not see the patient again. From the time of my arrival at the bedside till the labor was completed, some twenty to thirty minutes elapsed.

I am indebted to the husband for the further report of the case. I wrote Dr. Campbell in reference to it, but received no reply. He came to the house soon after I left and found the patient resting well. Although no morphia was given, she seemed to be in a kind of stupor for two days, but was getting along nicely, had no fever at any time; there was considerable tympanites on the first day, but it soon decreased. Hot poultices were applied, it seems in the absence of the doctor. She had attacks of pain in the left hip and thigh from time to time all along, which, from the description of the husband, was in the region of the anterior crural nerve. On the evening of the fourth day (October 23d), she began to suffer violent pain in the same region, to quiet which two doses of morphia were given before the arrival of the doctor, who had been sent for. He said that inflammation had set in and she was sinking rapidly. She was completely paralyzed in the left hip and leg, and died about twelve hours after the severe pain set in. No post-mortem examination was made. She had been dead several days before I knew of it. I had recommended that ice be applied to the abdomen over the binder, and a supply was secured and taken to the house, but I am informed the husband would not suffer it to be used. I had also recommended them to give nothing to move the bowels, but the husband is said to have given a full dose of oil the second day and produced an evacuation of bowels. No sedative was given, so reports the husband, till the patient was in *articulo mortis*, then a couple of doses of morphia. My knowledge of the treatment she received is very limited, and I have given all I know of it.

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#### A CASE OF HYSTERECTOMY, WITH A NEW CLAMP, FOR THE REMOVAL OF LARGE UTERINE TUMORS.

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BY

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(With two woodcuts.)

No department of surgery has made the same advances within the last thirty years, as that of pelvic surgery by abdominal section. Ovariectomy, oöphorectomy or Battey's operation, the removal of the uterine appendages or Tait's operation, oöpho hysterectomy or Porro's operation, gastro-elytrotomy or Thomas' operation, extirpation of the uterus or Freund's opera-



tion, and hysterectomy or Kimball's operation, by which is meant the removal of the whole body or any section of the uterus, with tumors inseparable therefrom. These form a list of surgical achievements, within a short period, which every gynecologist is proud to look at to-day.

Thirty years ago, I heard a surgeon say (than whom there was not one of his day, in our land, more distinguished), that any man who performed ovariectomy should be prosecuted for manslaughter. He had no doubt been brought to this conclusion from having lost every case upon which he had operated. The mortality of this operation has now been reduced in the hands of some to about five per cent.

Up to thirty years ago, there had not been one successful case of hysterectomy (as above defined); when our distinguished countryman, Gilman Kimball, in 1853, gained for America in this operation what our no less distinguished countryman, Ephraim McDowell, gained in ovariectomy—the first success.

Mr. Bantock tells us that "America has the credit of the first three successful cases of hysterectomy, in those of Kimball, Burnham, and Boyd, and that twenty years then elapsed before the first successful case in his own country;" so that it may be truly said that it is only within the last ten years that hysterectomy has been recognized as a legitimate operation, and this grudging recognition has been forced upon the medical world by such men as Bantock, Keith, Savage, Péan, Hegar, Köberlé, Olshausen, Kimball, Thomas, and others.

Bantock has operated 26 times with 7 deaths,

Keith " " 18 " " 1 death,

Savage " " 6 " " 1 "

Hegar " " 12 " " 1 "

Olshausen " " 12 " " 4 deaths,

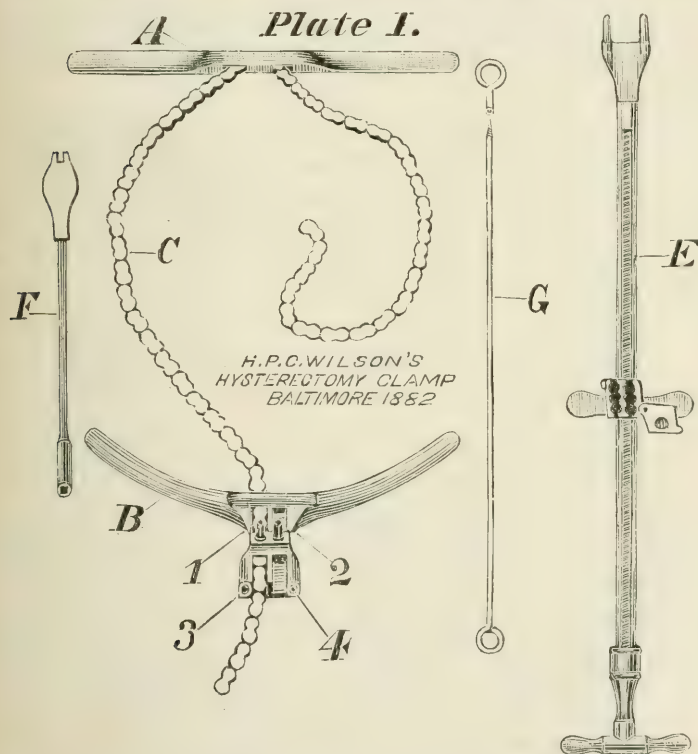
Péan (in his first three years' experience) operated nine times with two deaths.

I will not multiply statistics. These are sufficient to show the achievements made in this operation within the last ten years, and to make us feel assured that the future of hysterectomy will soon be what ovariectomy is to-day.

Few are the operators in abdominal surgery who have not consigned many women to lingering, painful lives, and certain death, because they presented uterine, and not ovarian tumors;

and even after opening the abdominal cavity, most of us have been too glad to make a safe retreat, when the uterus was involved and not the ovary. I can recall a number of cases which I have refused, and some from which I have safely retreated, upon which I should not now hesitate to perform hysterectomy with good expectations of success.

The results of Bantock, Keith, Péan, and Hegar have convinced me that the extra-peritoneal is the most desirable



method of treating the stump, and in view of this, I desire to call to the attention of the profession my chain-clamp for hysterectomy, when necessary for the removal of large uterine tumors. It was suggested to me by a case of very large fibrosarcoma involving the whole body of the uterus, and which I was sure would require a clamp much larger than any at my command. I had not, nor could I obtain, nor had I ever seen a Köberlé's serre-nœud, nor was I aware of the existence of

Cintrat's *serre-nœud* until shown me by my friend, Dr. Garrigues, after my clamp had been made, and used in the operation reported below. My inability to obtain Köberlé's, and my ignorance of the existence of Cintrat's, necessitated my devising some clamp equal to the emergency before me, or else abandoning the woman to a speedy death.

Thus, with the valuable aid of Mr. Charles Willms, the ingenious surgical instrument-maker of this city, I soon had ready for use in the case below, the following chain-clamp.

As seen in Plate I. it consists of: two cross-bars, A and B; a chain, C; a handle, E; two screw locks (1 and 2) in bar B; a key, F.

The cross-bars, A and B, are five inches long, oval in shape and without any angles, so as to rest comfortably upon the abdominal walls, across the abdominal incision, and there support the stump of the tumor, securely clamped by the chain C. Bar A is straight, and through it plays the chain C. Bar B is an arc of an circle, with two fenestræ, through which play either end of the chain C. It also contains two screw locks (1 and 2) by which the chain C is securely fixed, with the key F, when it has been sufficiently tightened by the screw power contained in handle E.

The chain C may be of any length desired. With the case below (in which I first used my clamp), I required a chain seventeen inches long, to enable me to encircle the pedicle, and pass its ends through the fenestra in bar B, and fix them to the screw power in handle E, with ease to myself.

The handle is a fork, with two prongs, for insertion into two holes (3 and 4) in bar B, when we desire to tighten the clamp, after we have thrown it around the tumor. The screw power in the handle is very similar to that used in an *éraseur*. After the clamp has been sufficiently tightened and securely locked with the key F, handle and key are removed.

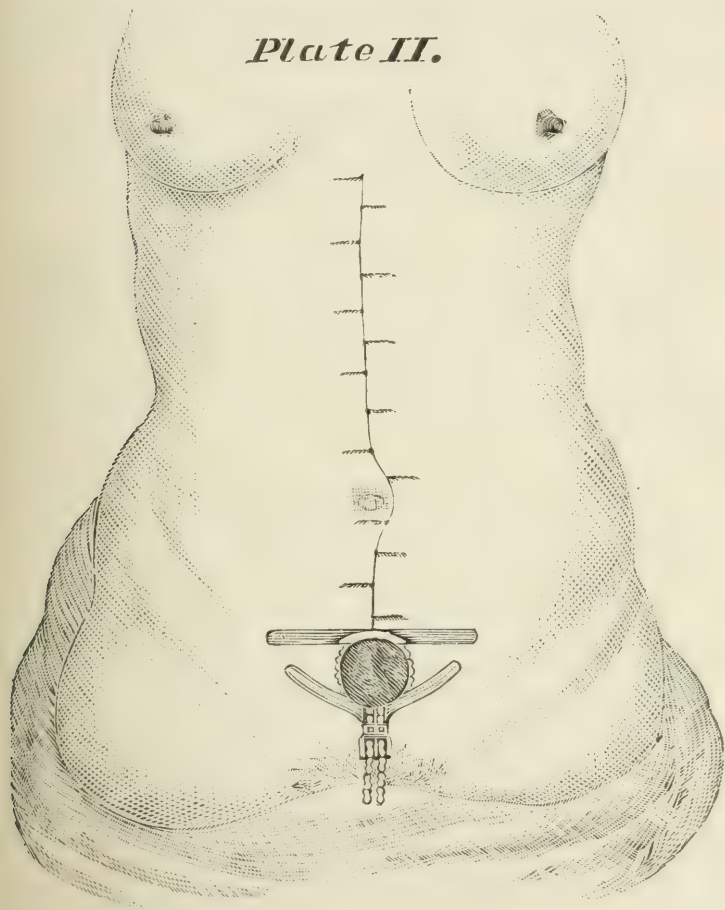
G, in Plate I., represents a needle, six inches long, made for me by Mr. Willms, for transfixing the pedicle just without the clamp; and thus guarding it against all possibility of slipping, during the violent retchings which sometimes follow these operations. From its construction, I am sure it would be impossible for my clamp to slip; but in the case below, I used the needles to make "assurance doubly sure," as it was the



first case in which I had tried it. These needles are, no doubt, similar to those used by other operators, though I have not seen them, nor any cuts, nor description of them.

Near one end, this needle has a sharp point, and above this

*Plate II.*



point a screw thread, for screwing into a shield, after it has transixed the pedicle.

The advantages of my clamp are, that it is light, is easily thrown around any size tumor, and can constrict any size pedicle, can be readily tightened or loosened at will, and as the chain plays through two bars, which rest upon the abdominal walls, it is always above the surface of the skin and no portion

of the chain or sloughing pedicle can be dragged down below this surface, as may occur with Köberlé's and Cintrat's serre-nœuds, notwithstanding the pedicle may be transfixed with long pins. I think it is far superior to the latter instruments, in the cases for which it is intended, and supplies a need which the clamps now in use cannot supply. Some of them are too cumbersome for convenient use.

In Plate I. may be seen the different parts of the instrument.

In Plate II., the clamp is in position, constricting a pedicle from six inches in diameter, to one, two inches in diameter.

It was devised for and employed in the following case:

In April, 1882, Mrs. J. W. K., æt. thirty-six, of Baltimore, the mother of ten children (six living), came to my office to consult me about an abdominal tumor. She was immense, and suffering with dyspnea and great pressure on the abdominal and thoracic organs, although she had only been cognizant of the tumor's presence a little over two years. Her youngest child was two and a half years old when she first felt the tumor situated in the right groin.

The examination at the first visit satisfied me that the tumor was thoroughly incorporated with the uterus, and was probably fibro-cystic in character. The uterine cavity measured four and a half inches in depth, and was inclined to the right side.

I told her the character of the tumor, and that an operation was unjustifiable, as she would probably die from the same. She was requested to come and see me once a month, that I might advise with her and keep her as comfortable as possible. This she did till I went to Europe in July. When I returned, the last of September, she was among the first patients to call on me. She was anxious for an operation. The tumor was steadily enlarging and her sufferings greatly increasing. An examination at this time still satisfied me that the tumor was fibro-cystic, and so situated and attached that an operation was unjustifiable. The sound only entered four and a half inches, which was too deep for an ovarian tumor, but much too shallow for the immense tumor, apparently attached to the uterus. As she had borne so many children, and the tumor appeared so soon after the birth of the last child, I felt that the enlarged uterus might be due to subinvolution, and as I could not distinctly move the uterus with the tumor, it might after all be ovarian, and not uterine. Still I put her off.

She came to me again the latter part of November, clamoring for an operation on account of her sufferings. Feeling the possibility of a mistake in my diagnosis, and that if the worst came to the worst, and I was unable to close the wound and make a safe retreat, I could perform hysterectomy; I told her (after explaining all the dangers to herself and her husband) that if she

would go to St. Vincent's Hospital, I would perform the operation, and I give her a chance for life.

1- She entered the Hospital December 5th, 1882, before I was ready for her. I had many cases there at that time awaiting operations, and I had no clamp which could grasp the large pedicle which I was sure I should find, were I forced to hysterectomy. I was glad to gain time, while Mr. Charles Willms completed my chain clamp, described in the earlier part of this paper. As it turned out, it was well I had taken precautions for every emergency, or I would not have been able to complete the operation with the instruments at my command.

On Wednesday, December 13th, 1882, at 2 P.M., I performed hysterectomy on Mrs. K. Her bowels were thoroughly moved this morning from a dose of compound liquorice powder, taken the night before. At 9 A.M. she took ten grains of quinine; at 12 M. she took a one-grain opium pill; at 1.30 P.M. she took one and a half ounces of whiskey. She was placed on the table at 2 P.M. and rapidly chloroformed by Dr. Gorter. The atmosphere of the room had been carbolized, but the spray was stopped when the operation commenced. All instruments, ligatures, sponges, and dressings were used out of carbolized water. All assistants' hands were washed in the same, and my hands were thus cleansed from time to time. My son, Dr. Robert T. Wilson, and Drs. William P. Chunn and E. Schaeffer assisted me in the operation. Drs. James Butler, O. J. Coskerry, and William Green were present with their valuable counsel.

She came under chloroform promptly and comfortably. I made an incision of four inches in the median line, between the umbilicus and pubes. Very soon I cut through large veins, which bled so profusely that I was compelled to tie them. The veins and hemorrhage were just such as we usually encounter when entering the abdomen for a uterine tumor, but which I have never encountered when making such entry for an ovarian tumor.

When within the abdominal cavity, there was presented to my view a dense, white, and shining tumor, perfectly unyielding to the touch. At the lower part of the incision there were such adhesions that I could not enter my hand for exploration; so I enlarged the opening to seven inches. I then passed my hand around and behind the tumor, and found it thoroughly incorporated with the uterus—firmly attached to the bowels and liver—with the omentum spread out all over the upper and front part of its surface, and containing a network of veins, many as large as my little finger. The lower part of the tumor (nearly up to the umbilicus) had such firm attachments in front that I could not approach the uterus except from behind. I did not realize at this stage of the operation that this was the bladder, which was spread out over the whole lower anterior surface of the tumor, and so intimately connected with it that no line of union could be discovered. It had grown up with the tumor until it was an immense bag, firmly blended with it nearly as high as the umbilicus.

In my manipulations—to make an exact diagnosis—though



very gentle, I ruptured small vessels enough to pour out considerable blood. The tumor was immovable and solid, firmly attached above, below, behind, and in front. With my hand and arm in the abdominal cavity and around it, I could not lift or move it one particle. It seemed impossible that it could be removed without the patient dying on the table; and yet, to close the abdomen with the damage done by manipulation and leave the blood (which could not be removed) for decomposition, would be but to abandon the woman to certain death.

I was not long in deciding to remove the tumor with the uterus and its appendages as the only chance for life. To do this, I was obliged to prolong the abdominal opening upwards to within one inch of the ensiform cartilage, and downwards to within one inch of the pubes. The immense omentum, with its enormous veins, was tied in sections with carbolized silk ligatures and cut away from the tumor. I was then able to get my hand to the top of the tumor in front, and tear loose its attachments to the liver. It required all my strength, assisted by Dr. Robert T. Wilson, to raise the upper end of the tumor upwards and forwards, to find that it was inseparably attached to the small intestines by a band three inches wide and half an inch thick. This was transfixed with a needle, armed with a double carbolized silk ligature, which was cut and tied on either side, and the adhesion then severed.

Mine and Dr. Robert Wilson's strength was not sufficient to raise the tumor from the abdominal cavity, and to accomplish this, with a small carbolized rope, I passed a running noose around it, and, standing in a chair above the patient, Dr. Wilson, Jr., with my assistance, lifted it out of the abdomen.

Even up to this point I had not realized what was the nature of the adhesions in front and below, and I was about to throw my chain clamp around the uterus, below the ovaries and Fallopian tubes, and just above the supra-vaginal junction (including the adhesions in front), when it occurred to me that I had better see where the bladder was. I passed my Simpson's sound into the bladder, and found that it entered its whole length. By moving it from side to side, I marked out the line of the bladder's attachment to the tumor, which was nearly up to the umbilicus, and spread out like an apron over its whole anterior surface.

With the end of the sound as a guide, and point and handle of my scalpel, I dissected and tore and tore and dissected till I had separated the bladder from the tumor. When I was done, and had thrown it over the symphysis pubis to get it out of the way, it looked like anything but a bladder, and was three or four times as large. My chain clamp was now thrown around the pedicle as above described; the pedicle was transfixed close to and just above the clamp by two large pins, six inches long, and the tumor was cut away about half an inch from the clamp.

The pedicle was touched with Monsell's solution of iron. The abdominal cavity was thoroughly cleansed of all blood. Any oozing spots were touched with Monsell's solution. The abdominal opening was closed with fourteen silver wire sutures. A hard

rubber drainage tube was inserted close to the pedicle, and the whole was dressed with a carbolized wet compress, an India-rubber cloth to catch any discharges from the drainage tube, and a flat carbolized sponge over the mouth of the tube. All was secured by a loose bandage.

The patient was put to bed with bottles of hot water around her and wrapped in blankets. She soon recovered from chloroform, and speedily reacted from shock. The operation lasted two hours, during which she was profoundly anæsthetized. At 10 P.M. her temperature was 99° and pulse 88. Ten drops of black drop were given at this hour, and six gtt. at 4 A.M. Slept little during the night, and had slight nausea.

Thursday, December 14th. To-day her temperature varied from 99½ to 101½°; pulse from 96 to 120; respiration from 32 to 38. Urine drawn three times to-day; good in quality and quantity. Milk and lime-water (half-ounce each) as often as desired. Got a pint during last night and to-day. Had twenty gtt. of black drop by the rectum at bed-time.

Friday, December 15th. Temperature varied to-day from 98½° to 102°; pulse from 112 to 128; respiration from 25 to 28. Took ten gtt. of black drop and slept four hours last night. Got about three pints of milk and lime-water, in equal parts, and small quantities at a time during the night and morning. Much too much; but she loved it, and asked for it, and retained it, and the nurse gave it to her. Has vomited hard curd, and had severe colic from undigested milk from 12 to 5 P.M. I then gave twenty ℥ Magendie's solution of morphine hypodermically, which soon eased her, and she fell asleep. At 10 P.M. her mind was slightly wandering, from the anodyne, I think. I threw into the rectum three ounces of beef-tea and one and one-half ounces of whiskey. Nothing but ice into the stomach. The abdominal cavity was washed out to-day with warm carbolized water, but it came away sweet and clear. The pedicle was touched with carbolic acid twice daily, and, at the same time, every accessible point about the clamp was well carbolized, and all dressings changed. Still, the sloughing pedicle was very offensive, and septicemia from this source was imminent.

Saturday, December 16th. At 8 A.M. temperature was 101½°; pulse, 120; respiration, 24. Slept last night from four to six hours. Took into the stomach during the night three teaspoonfuls of beef-tea, one teaspoonful of whiskey, and one tablespoonful of milk, but they all nauseated, and were not repeated. She has been anxious for lager-beer for several days, and as she could retain nothing else, it was given. She drank freely of it; it settled her stomach and greatly refreshed her. The pedicle this morning was terribly offensive, and was disinfected as before. I passed a large size, flexible gum catheter through the drainage tube, and washed out the abdominal and pelvic cavities with a one-per-cent solution of warm carbolized water; it came away pure and clear. Her tongue was very dry; I gave three ounces of beef-tea and one and one-half of whiskey

into the rectum, which was all retained. Her kidneys acted well. She has septicemia from the rotting pedicle. Has no peritonitis, no tympanites, no pain, no hemorrhage. Abdomen soft and pliable, and incision united by first intention.

At 1.30 P.M., temperature,  $103\frac{3}{4}^{\circ}$ ; pulse, 132; respiration, 32. Occasional nausea, but no vomiting. She drinks lager freely; it always settles her stomach and greatly refreshes her. Asked for a piece of stale bread, which she ate and enjoyed. Breath markedly sweet. Tongue dry. I removed the drainage tube, which was followed by a very offensive smell from the under part of the pedicle, where it came against the tube. I passed a large-size gum catheter into the abdominal and pelvic cavities, and washed them out thoroughly with carbolized warm water. It came away sweet and clear. The pedicle was well carbolized. I injected twenty  $\text{m}$  of hydrobromate of quinia hypodermically; twenty  $\text{m}$  of Magendie's solution were given in the same way for great restlessness; three ounces of beef-tea and two ounces of whiskey were thrown into the rectum, and all retained. Bladder acting well.

Eleven P.M., pulse,  $146^{\circ}$ ; could not get the temperature for great restlessness. Extremities cool. Evidently dying of septicemia from a decomposing pedicle. Mind clear. Retained her injections of beef-tea and whiskey into the bowels, and retained and enjoyed her draughts of lager-beer into the stomach up to the last.

Sunday, December 17th. Mrs. K. died at 9.30 A.M. to-day of blood poison from the sloughing pedicle, ninety-one and one-half hours after the operation.

It is of interest to note in this case:

1st. Ten carbolized silk ligatures were left in the abdominal cavity; they gave rise to no unpleasant symptoms.

2d. There were no indications of cellulitis or peritonitis.

3d. There was no tympanites; the abdomen was soft and pliable everywhere.

4th. There was no sanious discharge from the abdominal or pelvic cavities through the drainage tube.

5th. The sloughing pedicle was terribly offensive, notwithstanding all my oft-repeated efforts to disinfect it. This was, no doubt, the source from which originated the septic matter that proved fatal to my patient.

6th. I saw her dying from a simple cause, and was powerless to arrest it. In a similar case, I would, with my hypodermic syringe, inject the sloughing pedicle with carbolic acid from time to time, as well as wash it with the same externally.

7th. This patient ought to have recovered. She died of an



accident that sometimes kills even in the simplest surgical operations.

8th. The tumor weighed upwards of fifty pounds; was a fibro-sarcoma. The uterus was completely imbedded in the mass. There was no line of distinction between uterus and tumor. The uterus did not bear any proportionate size to the tumor. Its depth from external os to fundus was only four and one-half inches.

9th. The pedicle, when cut through, measured on the tumor six inches; when constricted by my chain clamp, it measured two inches.

10th. The abdominal opening, which was from one inch below the ensiform cartilage to within one inch of the symphysis pubis, had perfectly united by first intention, showing that a long incision heals as rapidly as a short one. In abdominal surgery we should not embarrass our manipulations by too small openings.

11th. Lager-beer gave the greatest comfort to the patient. It refreshed and settled her stomach when nothing else would.

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## CORRESPONDENCE.

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### MR. SPENCER WELLS' OVARIOTOMY STATISTICS.

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TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

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DEAR SIR:—I have just received from Mr. Wells the accompanying communication with a request to send it to you for publication in your valuable JOURNAL. In reading the opening sentence, one might be led to infer that I had myself compiled the statistics, whereas they were furnished me by Mr. Knowsley Thornton for the new edition of my "Surgery;" but as they reached me too late for insertion in that work, I published them with his permission in the *Philadelphia Medical News*, for January 25th, 1883. Mr. Thornton unfortunately dealt simply in generalities without any details, and this, no doubt, is the reason why Mr. Wells has been placed in a false position in regard to the successively diminishing mortality of his ovariectomy cases. It may gratify Mr.

Wells, as it certainly does me, to know that his statistics are given in my work in detail as derived from his own recent treatise.

Please send Mr. Wells a copy of your JOURNAL containing this letter, and believe me to be, very respectfully, your friend,

S. D. GROSS.

PHILADELPHIA, March 20th, 1883.

3, UPPER GROSVENOR-STREET, LONDON,  
February 27th, 1883.

MY DEAR PROFESSOR GROSS:—You have published in the *Philadelphia Medical News* a statement comparing the results of my operations of ovariectomy in 1,088 cases with those of three other operators in 381, 328, and 226 cases respectively, making a total of 935 cases. The mortality of my cases is given correctly at 22.15 per cent; and that of the other operators as 10.76, 10.67, and 11.94 per cent. On this plain statement, as you have published it, any one would conclude that I am a less successful operator than my juniors. Indeed, the author of a very eulogistic review of my last book in the *American Journal of Medical Sciences*, of January, 1883, misled by a false statement in the AMERICAN JOURNAL OF OBSTETRICS (vol. xv., page 547), that I “had gone on for twenty years operating on hundreds of cases with a mortality of 25 per cent,” takes the trouble to give what he believes to be a true explanation of the “high range of mortality in his [my] ovariectomies.” He says that I had labored for an “ideal success;” but “his [my] own practice fell short of this ideal.” If it were true that after twenty years’ operating I had gone on operating with a mortality of 25 per cent, while others did not exceed 10 or 12, some such explanations as those proffered by my able and kindly reviewer might serve as my excuse. *But it is not true.* When I had been operating for twenty years, I had reduced my mortality to 11.62 per cent. The results of successive series of 100 cases had been made known, from 34 in the first, and 28 in the second, to 17 in the ninth, and 11 in the tenth series of 100 cases. My cases of 1879, 1880, and 1881 had been published, with results of 11.62, 9.57, and 10.7 per cent; and in the preface to my book, published in May, 1882, I afford proof that, “notwithstanding the fact of my being often called upon to treat patients rejected by other surgeons as unfavorable cases, the progressive diminution of the mortality still continues.” I added, “It is still more gratifying to be able to add that this increasing success is not confined to myself nor to British surgeons, but is also established in Germany, France, and Italy.” There really can be no excuse for this attempt to discredit me with a

high mortality after twenty years' experience, as in my book (pages 214-15) I had shown very plainly how in successive periods of five years the mortality progressively diminished and that in the

First five years, . . . . .	about 1 in 3 died.
Second and third five years, . . . . .	" 1 in 4 "
Fourth five years, . . . . .	" 1 in 5 "
Last two years, . . . . .	" 1 in 10 "

Or, putting it in another form, that in the

First five years, . . . . .	70 per cent recovered.
Second five years, . . . . .	74 " "
Third five years, . . . . .	73 " "
Fourth five years, . . . . .	80 " "
Two last years, . . . . .	90 " "

I trust, my dear Professor, that you will accept my desire to stand well with my American brethren as a sufficient excuse for this long letter. And, with sincere respect,

I am, etc.,

T. SPENCER WELLS.

[It gives us particular pleasure to comply with Dr. Gross' request, irrespective of the desire we feel to correct any erroneous statements which Mr. Wells may think have been made by contributors to this JOURNAL regarding himself or his statistics. We would beg to remind Mr. Wells, however, that, if he should in the future have any corrections to make of statements which have appeared in this JOURNAL, he will receive prompt and cheerful attention by addressing us personally.—ED.]

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TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS

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DEAR SIR:—IN the JOURNAL OF OBSTETRICS for January, 1883, is on p. 89 a short abstract of Dr. Champneys' paper on kyphotic pelvis. According to this abstract, the author criticises Breisky's description, laying stress on the influence of sitting, which in the kyphotic pelvis increased the inversion of the tubera ischii, while in the flat pelvis it increased their eversion.

Every one acquainted with Prof. Breisky's treatise (*Ueber den Einfluss der Kyphose auf die Beckengestalt. Wien. medicin. Jahrbücher*, 1863) must recognize at once that Dr. Champneys' critic is based upon an incomplete study of the criticised author, who very extensively discussed the influence of the body-weight



as well in the erect as in the sitting position on the shape of the kyphotic pelvis (see p. 39).

Moreover, Breisky, describing a kyphotic pelvis with a marked eversion of the tubera ischii (l. c., p. 48), particularly explains the conditions to which Dr. Champneys believed to be the first to draw attention.

As Dr. Champneys' unjustified criticism is given the widest publicity by being printed in your JOURNAL, I hope, sir, you will do a good service to scientific truth in printing also these lines in one of the next numbers of your JOURNAL. I am, sir, with my best compliments, your obedient,

DR. WM. FISCHER,  
*Assistant to Prof. Breisky.*

PRAGUE, February 25th, 1883.

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## OBITUARY.

CARL VON HECKER.

(With portrait.)

DR. CARL VON HECKER, of Munich, Professor of Obstetrics, Director of the Maternity Hospital and of the District School for Midwives, died suddenly and unexpectedly on December 14th, 1882. For three years he had been suffering from neuralgia in the left arm to such an extent as to seriously reduce his general health; but as his mental vigor continued unimpaired, he fulfilled his arduous duties, with admirable perseverance, as it were to his last breath. On the day of his death he held his clinic, gave his theoretical lectures, and between five and six P.M. his course in operative obstetrics. Immediately afterwards, more cheerful than usual and contented, like every one who has done a good day's work, he returned to his family, conversed for some time in the best of spirits, and then retired to his room to rest and refresh himself. But this proved to be his last rest, for at a quarter-past seven o'clock his deeply grieved family found him lifeless. A meningeal apoplexy had cut short his earthly career.

Carl von Hecker was born in 1827, being the only son



H. Bonche, Lith. N.Y.

PROF. C. v. HECKER,  
MUNICH.





of a famous professor of medicine at Berlin. He took his degree of Doctor of Medicine and Surgery at Berlin in 1848, and in 1850 devoted himself to the study of his speciality at Vienna. In the following year he was appointed assistant to Privy Medical Councillor von Busch, Berlin, where he established himself in 1853, with a thesis on "*De Retroversio Uteri Gravidæ*," as private lecturer at the University of Berlin. In 1858 he received a call to Marburg as Professor of Obstetrics, Director of the Maternity Hospital, and Instructor in Midwifery. A few weeks after having entered on his activity there, negotiations were set on foot which resulted in his appointment, on May 1st, 1859, as Professor of Obstetrics and Director of the Maternity and of the District School for Midwives at Munich.

As instructor and savant, von Hecker distinguished himself by high mental qualification, thorough scientific attainments, and especially by deep and comprehensive knowledge in the field of obstetrics. The elegant form of his lectures, the clear and comprehensible nature of his delivery, and the perfect arrangement of his material exerted a powerful attraction on his hearers. His didactic lectures on obstetrics are models of their kind.

In his literary activity we recognize throughout an admirable mastery of the scientific material, an eminent spirit of investigation, and that sober objectivity in judgment which is apt to secure our full confidence and the inclination to be guided by him. He justly laid down, as a preliminary condition to the progress of obstetrics, a rigid, though laborious, investigation of details, as well as an intimate coalescence of obstetrics with general medicine.

His first larger work, "*Klinik der Geburtskunde*," was written in 1861 in conjunction with Prof. v. Buhl. The book received the approbation of the profession and may be looked upon as the first scientific treatment of the subject of midwifery. Besides, he published numerous valuable smaller statistical papers, articles in special journals, and annual reports which proved advantageous to the specialty. A much larger and very valuable statistical paper, "*Observations and Investigations in the Maternity at Munich*," comprising the time from 1859 to 1879, was published by him in 1881. The paper

was based on more than 17,000 labors—an amount of material hardly equalled in literature by any single observer. His noteworthy last contribution, "Statistical Reports from the Maternity at Munich," gives a further tabular arrangement of the relative frequency of the various presentations and anomalies of labor from June 1st, 1859, to May 31st, 1882, and will be found in the *Archiv für Gynäkologie*, XX., 3, of which periodical v. Hecker was one of the editors.

Worthy of mention is also the introduction by him into the Maternity Hospital of Munich of a system of record which gave an impetus to the study of statistics; finally, the finishing and editing for the press of Prof. Ernst Buchner's second edition of the latter's "Gerichtliche Medicin."

The Obstetrical Clinic will ever be indebted to him for the enrichment of the collection of specimens which, when he entered on his duties there, contained but little of value; while at present it includes upward of three hundred specimens, many of which are exceedingly rare and valuable.

He held numerous positions of trust and received many tokens of recognition from the government. He was the active, corresponding, or honorary member of nine scientific societies which deplore his loss.

His family life was an exceedingly happy one. His sterling character, amiability, and sociality gained him many friends. His life was one of great activity, although short, and his memory will be cherished by men of science, the university, his colleagues, friends, and students.

His own words, spoken at his inaugural address as Rector magnificus (President of the University), may give us some consolation for his early demise:

"To live long is not to live much;  
To do much is to live much."

PROF. AMANN, Munich.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

( A B S T R A C T . )

*Meeting, December 5th, 1882.*

### RETROVERSION PESSARY, WITH AN ELASTIC SUPERIOR BOW.

DR. T. A. EMMET showed a pessary which consisted of an Albert Smith pessary from which the upper bow had been cut off and replaced by a hollow soft-rubber bow, the ends of which were slipped over the arms left by the removal of the original bow. This soft-rubber bow was somewhat enlarged in its central portion, forming an air-cushion. Dr. Emmet stated that, while the instrument shown did not fully realize his idea, it was sufficient to show what the design was—namely, to furnish a pessary with a spring-like action exerted in an upward direction, combined with a yielding support to the uterus.

### VAGINAL HYSTERECTOMY FOR EPITHELIOMA OF THE CERVIX.

DR. W. C. BURKE, JR., of Norwalk, Connecticut, who was present by invitation, showed a uterus which he had removed by the vaginal method twenty-four days before. The patient, who was doing well thus far, was thirty-seven years old. She had formerly been under Dr. Burke's care with stenosis of the os externum, accompanied by leucorrhea and sterility. Mechanical dilatation rendered the cervical canal normal, and the patient ceased her attendance. Last March she again presented herself, for the relief of metrorrhagia, which, on examination, was found to be due to a cauliflower excrescence from the cervix. The cervix was amputated, but recently the disease had been found to have returned in the upper part of the cervix, and it was on this account that the uterus was removed. The organ was freely movable, and there were no evidences of infiltration of the tissues outside the uterus. Dr. Burke gave a minute description of the steps in the operation, and stated that the ovaries might have been removed without difficulty had it been thought advisable to remove them.

*Report of the Pathologist, DR. GARRIGUES.*—The specimen was preserved in Wickersheimer's solution, and, therefore, probably somewhat increased in size. The uterus measures, from os to fundus, external measure, 75 mm.; from tube to tube, 40 mm.; in circumference just below the tubes, 95 mm.; around middle of cervix, 100 mm. The depth of the cavity of the uterus is 65 mm., of the body 25 mm., the isthmus 5 mm., and the cervix 35 mm. The wall of the body and of the cervix measure each 15 mm. in thickness. All these measures are normal except that of the cervix, which is increased 10 mm. in length.

The mucous membrane of the body and isthmus looks healthy.



Of that of the cervix, on the contrary, a narrow longitudinal strip only on the posterior wall has a healthy appearance, and shows plicæ palmatæ, all the rest being transformed to a partially bushy, partially pulpy mass, at the upper end of which, on the anterior wall, is seen a polypoid growth of the size of a hazel-nut. The os externum looks healthy, but is distended by the diseased mass situated immediately above it, and showing in its opening.

Part of the cervix was hardened in a concentrated solution of picric acid, and sections thereof stained with ammoniated carmine.

*The Inner Half.*—Near the inner surface the tissue is composed of very small round cells, with very little connective tissue between. The cells have a comparatively large nucleus. Very large and thick-walled arteries are seen in this part. In many places the cells are found in rows like beads on a string, which probably is due to the degeneration of muscular bundles to sarcomatous tissue. Glands are nowhere seen.

On the villi covering the inner surface are found numerous large ciliated columnar epithelial cells with nucleus, but even on excellent specimens they nowhere form a regular brim, as on the healthy cervix.

In the remoter parts is found muscular tissue, but with a great increase of connective tissue, in which are interspersed isolated cells similar to those near the internal surface.

*Outer Half.*—This is formed by normal muscular tissue, but the bundles are separated by broad bands of connective tissue interspersed with single spindle cells, which seem to be muscular fibres, but may also be connective-tissue corpuscles.

The diagnosis is, therefore, *Diffuse Small-Round-Cell Sarcoma* starting from the mucous membrane of the cervix, extending outward, and chronic inflammation of the outer half of the cervix.

It is very rare that sarcoma, especially the diffuse form, starts from the cervix. Generally the process begins in the submucous muscular tissue of the body of the uterus. (Gusserow, "Neubildungen des Uterus," p. 150, in Billroth's "Frauenkrankheiten," vol. i.)

DR. T. A. EMMET referred briefly to a case of his own which had been related at a former meeting of the Society, and expressed his feeling that the final success of such operations was a matter of considerable doubt. It seemed to him questionable, in view of the tendency of the disease to recur, whether the operation was to be recommended.

DR. H. J. GARRIGUES thought it well to remove the ovaries in cases of hysterectomy wherever practicable, for they were apt to give rise to trouble if left behind, as shown by the formation of a hemocele in one of M. Péan's cases.

DR. BURKE remarked that his patient had passed a menstrual period once since the operation, and without any flow.

DR. W. M. POLK gave it as his decided impression that the most appropriate field for the operation of removal of the uterus was that of sarcomatous growths, which, while they showed a marked tendency to local recurrence, and in general proved fatal in the

end, yet were not disposed to infect neighboring parts. Hence, in such cases, removal of the uterus was more likely to get rid of the neoplasm permanently than in cases of carcinoma, besides which, the repeated minor operations rendered necessary in cases of sarcoma were apt to give rise to septicemia in the end.

DR. T. A. EMMET concurred in Dr. Polk's views.

#### DISSECTING METRITIS.

DR. GARRIGUES presented a specimen of uterine tissue which had been cast off in a case under his observation, and referred to two other cases, one of which had been already reported to the Society. The features of interest in the case now reported were, that the patient was not supposed at the time to be seriously ill, and also that the portion of tissue expelled was not in a septic condition at all, but was perfectly sound, like a piece of fresh beef. The specimen was examined microscopically, and found to consist of healthy uterine tissue undergoing the fatty degeneration of involution, the patient having been recently delivered. He again called attention to the great thinning of the wall of the uterus which took place in these cases, and to the danger, therefore, of rupture of the uterus in a subsequent delivery.

#### REMOVAL OF THE UTERINE APPENDAGES.

DR. T. A. EMMET showed a number of specimens of dilated Fallopian tubes which had been given him by Mr. Lawson Tait, of Birmingham, England, and referred to Mr. Tait's practice of removing the uterine appendages frequently for the relief of chronic pelvic indurations which had heretofore been regarded as inflammatory thickening of the broad ligament, but which Mr. Tait looked upon as due to dilatation of the Fallopian tubes in all cases in which the usual treatment failed to produce a cure in the course of six months. Dr. Emmet added that Mr. Tait's results had been remarkably successful.

The following were the histories of three of the cases, as given him by Mr. Tait:

CASE I. *Pyosalpinx*.—"Patient, aged twenty-eight years, had been a prostitute, and suffered several times from gonorrhea. There was intense abdominal and pelvic pain, amounting to agony at times. She could not endure sexual intercourse, and could walk only with difficulty. A mass was felt at the right of the uterus. On March 28th, 1881, I [Mr. Tait] opened the abdomen to remove the mass, but could not complete the operation on account of adhesions. On February 2d, 1882, the case had got so much worse that I made a second attempt and succeeded. The patient made an easy recovery, and left the hospital free from pain."

CASE II. *Double Hydrosalpinx*.—"The patient had suffered from persistent pain, with a tender mass on each side of the uterus. Menstruation was normal. Walking brought on pain, and intercourse was unendurable. I opened the abdomen and found all the pelvic organs matted together. Removed the uterine appendages.

Both Fallopian tubes were adherent, occluded, and distended with serum."

CASE III.—"Patient, aged thirty-eight years, gave birth to a child three years before, and had been ill ever since, with several attacks of acute peritonitis, from two of which she escaped with difficulty. The pelvic organs were fixed. Intercourse was unendurable. Two tender masses were felt behind the uterus. I opened the abdomen and found everything matted, the appendages completely adherent, the tubes distended with serum. The operation was very difficult to perform, and was attended with profuse hemorrhage. The patient, however, made an easy recovery."

#### FIBROID TUMOR OF THE UTERUS.

DR. T. A. EMMET also narrated this case, and stated that the point of interest connected with it related to the peculiar development of the tumor, which rendered the operation a very difficult and a fatal one. From the large tumor a spur was developed which fitted so tightly into the pelvic cavity that it seemed impossible to remove it. While attempting to do so, the uterus, with the mass, was torn from its attachments to the vagina and pelvic tissues, and a torrent of blood poured forth from the ruptured vessels. Although the hemorrhage was finally controlled, the patient died really from the excessive loss of blood. Her condition had been such that, had the operation not been performed, death would doubtless have resulted within a few days, from the natural course of the disease. He mentioned the case simply as another which went to show the liability to the occurrence of unforeseen accidents.

DR. P. F. MUNDÉ thought it desirable that we should possess some means of diagnosing enlargement of the Fallopian tubes by physical examination, rather than to undertake so serious a procedure as laparotomy on the strength of a mere inference. Was there, he asked, any such means?

DR. F. P. FOSTER stated that he had diagnosticated the condition in one instance from having recognized, on rectal examination, a body of a peculiar shape, resembling that of a fern head, occupying the situation of the Fallopian tube. He noticed that the specimens presented by Dr. Emmet were very much of this shape. In the case to which he referred no operation was performed, but he was as positive about the diagnosis as he could be about anything that was not actually demonstrated.

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*Meeting, December 20th, 1882.*

#### PLACENTA FROM A CASE OF TRIPLE PREGNANCY.

The specimen was presented by DR. POLK, and had been removed from a woman who aborted at about the eighth month. On account of the large size of the abdomen, Dr. Polk had suspected a twin pregnancy, and, therefore, made careful examination for the beat of the fetal hearts, but he was unable to distinguish more than one sound, which, however, was rather widely diffused. Labor was



very easy indeed, and continued only an hour and three quarters to the expulsion of the placenta. But a few minutes elapsed from the birth of one child to that of the other in succession. All lived, were females, and weighed about five pounds each. The placenta weighed forty-six ounces, and showed very plainly three sacs, one of them being quite distinct from the two others. Dr. Polk thought the fact of there being no apparent demarcation in the placenta went to show that the ova had proceeded from the same ovary, although he must admit, with Dr. Garrigues, that this opinion was not susceptible of positive demonstration. The close proximity of two of the cords, their insertions being side by side, would also seem to point to the probability that two of the fetuses had sprung from a single ovule with a double germ.

DR. H. J. GARRIGUES remarked with reference to the commonly accepted view as mentioned by Dr. Polk—namely, that delivery was likely to take place at a time corresponding to a menstrual period—that, according to his observation, the statement was not sustained by facts. He had observed that usually both ovaries were not congested at the same menstrual period, but that they were congested alternately, and, in the cases of which he had been able to keep a record, delivery, whether premature or at full term, had by no means always occurred at a time corresponding to some even multiple of the time between the beginnings of two menstrual periods. According to statistics given by Matthews Duncan of cases where the exact date of conception was known, confinement took place more frequently on the 275th day than on the 280th.

DR. F. P. FOSTER remarked that it was not unusual for menstruation to occur at intervals a few days longer or shorter than a lunar month, and should the ideal period be anticipated by but half a day for ten months in succession, labor would fall upon the 275th day. Dr. Foster also remarked that about seven years ago he attended a patient who gave birth to triplets, all of the circumstances corresponding almost exactly with those in the case just related by Dr. Polk. Labor was short and easy. The children, all of whom were females, were born in rapid succession; the placenta was a perfect counterpart of what had just been exhibited.

#### REMOVAL OF THE COCCYX AFTER INJURY.

DR. GEORGE T. HARRISON presented the three lower bones of the coccyx which had been removed from a patient with the following history: Aged twenty-nine years, admitted to the Woman's Hospital, Dr. Emmet's service, in March, 1881; had been under treatment for the past nine years for uterine disease. Some weeks before, when sitting down, she struck the end of the coccyx on the corner of a chair. She was able to walk immediately afterward, but on the next day movement of the body and of the lower extremities gave severe pain in the region of the coccyx. This continued until she entered the hospital. In June the patient was discharged improved, but returned again in October. She was then unable to sit without great pain, or to stand longer than a few minutes at a time. Dr. Harrison here remarked that this patient had come under his care eight years ago, suffering from retro-

flexion of the womb, bound down by perimetric adhesions. He succeeded in restoring the uterus to its normal position, and the patient was comparatively well until the accident before mentioned. Dr. Emmet thought the symptoms were due to perimetric inflammation, and directed treatment accordingly; but, as no improvement followed, the coccyx was then removed, with the exception of the first bone, which was firmly ankylosed with the sacrum. The bone itself was not apparently diseased.

DR. DAWSON asked whether, in cases in which motion could be detected in the coccyx, attended by pain and all the symptoms mentioned by Dr. Harrison, which were not relieved by other means, it was justifiable to remove the movable extremity. About a month ago he removed the fractured coccyx from a patient who had suffered for years from pain apparently attributable to a fall, striking the coccyx against the edge of a trunk. He had under care at present a young girl who had for years been treated for uterine disease such as had existed in Dr. Harrison's patient, and had been only partially relieved; but the coccyx was movable, and was the seat of considerable tenderness and pain, following a fall upon that point some years before, and the question had arisen whether the bone should not be removed.

DR. HARRISON replied that, as the symptoms referred to still existed after relief of the uterine trouble, it would be entirely justifiable to remove the coccyx. Dr. Emmet had observed that in many cases symptoms which were apparently attributable to disease of the coccyx had disappeared on directing treatment to the uterus or its appendages, and he made it a custom, therefore, not to proceed immediately to the removal of the coccyx until it had been determined that the symptoms were not of a reflex nature.

DR. LEE remarked that he believed the subject of coccygodynia had not received the attention in this city, and perhaps throughout this country, which it deserved. This might have been due to the fact that many years ago, when the operation was being performed extensively in England, it was found subsequently that it had been done in many cases in which there was no necessity for it, and it therefore fell into disrepute. He believed that the view held by Dr. Emmet—viz., that in most cases in which symptoms of coccygodynia existed they were due to pelvic cellulitis behind the uterus—was, perhaps, open to criticism. He himself was cognizant of several cases in which removal of the coccyx had been attended with the greatest possible benefit, after a great variety of other means had failed to give any relief whatever. He had performed the operation with a successful result in two cases within the past year, all other means having failed. In one case there was found to be fracture of one of the bones, and in the other chronic periostitis, arising from a fall upon the stairs.

DR. CHAMBERLAIN remarked that, although we should discountenance any unnecessary operative procedure which mutilated the body, he was not aware that any evil result had followed excision of the coccyx, and, the part being comparatively an unimportant one, it might be justifiable to remove it, even though it had not been positively demonstrated to be the seat of the trouble.

Meeting, January 2d, 1883.

VESICO-VAGINAL FISTULA, WITH SPECIMEN.

DR. P. F. MUNDÉ narrated a case as follows: The patient, a mulatto woman, came under his care at Mount Sinai Hospital about two months ago, having been sent from Jacksonville, Fla., by her physician, Dr. Drew. She was delivered of her first child, about seven years ago, with the forceps. Soon afterward there was incontinence of urine. Dr. Drew then first saw her, and made a diagnosis of vesico-vaginal fistula. Escharotics were applied, with the hope of closing it, but failed. When Dr. Mundé first examined the patient the bladder was empty; no urine was escaping through the fistulous opening, and it could not be discovered. Milk injected into the bladder escaped only through the urethra. The uterus and the bladder were bound together by firm adhesions. After the examination the temperature rose to 104° Fahr. At the second examination, made a week or ten days later, he was able to pass a probe into the bladder through a fistulous opening in the cervical canal, the anterior lip of the cervix having sloughed away. The fistulous opening could not be brought into view. An attempt was made to dilate the vagina according to Bozeman's method, and hot-water injections were administered. This treatment was continued for about six weeks. The patient was very sensitive to examination, and each time there was a slight elevation of the temperature. Friday, a week ago, an examination was made under chloroform as usual, and, during *gentle* traction by the tenaculum on the anterior edge of the funnel leading to the fistula, the fistulous opening was suddenly and unexpectedly brought plainly into view. The following Monday was set for a plastic operation to close the fistula, but within thirty-six hours after the examination the temperature rose to 107° Fahr., peritonitis developed, and at the end of a week the patient died. At the autopsy, extensive old adhesions were found; the uterus was firmly adherent to the bladder. In Douglas' pouch, on the left side, was a laceration of the peritoneum, which had probably occurred during traction with the tenaculum at the last examination. There was also an abscess of the left ovary, which, however, had not yet ruptured.

DR. A. JACOBI suggested the use of the galvano-cautery in the treatment of these small fistulous openings.

DR. MUNDÉ remarked that the situation of the fistula in this case was such that its closure with the cautery would almost certainly have resulted in cicatricial contraction of the cervix.

DR. LEE had seen a number of similar cases of vesico-vaginal fistulae with a pin-point opening, both in his own practice and in that of Dr. Sims and Dr. Emmet, and he had found, contrary to the opinion expressed by Dr. Mundé, that, even when fully exposed to view, it was exceedingly difficult to close them successfully with the silver-wire suture. This difficulty was due to the presence of cicatricial tissue which had been produced by the attempts of nature at repair, or by previous treatment with caustics. His success with the galvanic cautery had not been much greater.



With regard to the fatal attack of peritonitis in Dr. Mundé's case, it was evident that undue traction had not been made during the examination, and it was probable that the peritoneal adhesion which had given way, and which evidently was very friable, would have been lacerated under any other slight provocation. In not a few of the cases in which Emmet's operation for laceration of the cervix had been performed by unskilled operators, traction had been so rudely made as to result in a condition of the pelvic tissues which was liable to give rise to peritonitis upon the slightest exciting cause.

DR. JACOBI further remarked that about twenty years ago he had occasion to treat a case of vesico-vaginal fistula in which the opening was quite small, and in that case he was enabled to effect a cure within four or five days by fifteen or twenty applications of a concentrated solution of nitrate of silver, made with a brush. His experience in these cases had not been extensive, but he felt convinced that, had the galvanic cautery been used in Dr. Mundé's case, before the cicatricial tissue had been augmented by the acid caustics, the fistulous opening could have been closed without injury to the cervix. With regard to the readiness with which peritonitis developed, he had examined the condition of the tissues post mortem in a number of cases, and had found the membrane at the seat of the inflammation thickened, of a white color, friable, easily breaking down under the finger, the seat of granular degeneration; and in many cases, doubtless, it would require but the slightest provocation during life to cause the parts to give way, probably resulting in fatal peritonitis.

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## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

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*Stated Meeting, March 1st, 1883.*

### INTRAUTERINE INJECTIONS.

DR. LAURENCE JOHNSON related the history of a case which illustrated the possible dangers of intrauterine injections with Chamberlain's tube. He had practised the injections for about one week without any accident whatever, and the next time, introducing the tube with the utmost care, and throwing in the current of water with as near the same force previously used as possible, he found that, when the injection had been finished, the water was tinged with blood, and some blood followed the withdrawal of the tube. A severe chill occurred within half an hour, the patient's temperature rose to 107° F., the pulse to 160°. This condition continued for two or three hours, and then subsided, since which time the case had gone on very well.

The PRESIDENT, Dr. Fordyce Barker, remarked that during the last few years he had had occasion to frequently use intrauterine

injections, and also to express a word of caution to those whom he met in consultation in regard to continuing their use in the treatment of septicemia and puerperal fever, beyond a certain fixed point of time. It was well known that the uterine sinuses closed, ordinarily, within three or four days after labor. It had occurred to him to see cases where the evidence had been conclusive, to his mind, that the introduction of the Chamberlain tube, a most excellent instrument to be used when intrauterine injections are indicated, has been continued too long, and that, after the sinuses have been blocked up by the formation of coagula or the contraction of the uterine tissues, some of the channels have apparently been opened, and the absorption of septic material has followed, as proven by serious reinfection. Furthermore, it has been noticed, after using intrauterine injections for one or two days, that, when the tube is withdrawn, it has been found to be covered more or less with little points of blood; in some cases, slight hemorrhage has followed, and in others, profuse hemorrhage has occurred. Consequently, he had frequently spoken concerning this possible danger in continuing the use of the tube for such a length of time that it becomes a source of traumatic injury to the internal surface of the uterus, and thus of infection.

DR. ISAAC E. TAYLOR then read a paper on

THE NATURALLY FAULTY OR CONTRACTED PELVES; WITH THE HISTORY OF A CASE OF LABOR, THE NON-DELIVERY OF THE CHILD, AND THE DEATH OF THE MOTHER AFTER CRANIOTOMY AND CEPHALOTRIPSY.

The faulty pelves referred to embraced the equally contracted or the justo-minor, the infantile or the immature, and the male or the funnel-shaped. The patient whose history is given was twenty-nine years of age, healthy, whom he first saw in consultation with Drs. Wharton, E. A. Judson, Waterman, and others, on July 28th. At that time, the labor pains were short, and recurred at intervals of ten minutes, the os was dilated to about the size of a half-dollar, and the head occupied the left occipito-anterior position. Ergot produced only a very slight increase of pain. A third of a grain of morphine was then administered, hypodermically, which gave the patient some rest. On July 29th, the os was found widely dilated, the head occupying the same position as before, and resting at the brim. Forceps were applied, but no change could be effected in the position. Version was then attempted, but was unsuccessful. Craniotomy was then performed. At that time the position of the head was transverse at the superior strait, with the brow presenting, and perforation was made in the right side. The cephalotribe was applied, the handles brought into position, and the brain more freely evacuated, and then traction was made for fifteen or twenty minutes without causing any advance. The instrument was then removed, and, on examination, it was found that the cranium had regained the same form as before its application, and this Dr. Taylor believed to be not unusual. He then applied his long narrow-bladed forceps, and brought the head more securely into the pelvis. A right-angled blunt-hook was inserted into the mouth of the child.

Meigs' long embryotomy forceps were applied, the head brought into the inferior strait, and finally delivered after three hours' trial. The shoulders then offered resistance, and, on examination, he became convinced that the pelvis was generally contracted, and that there was not sufficient space to permit any further manipulation by the hands. A right-angled blunt hook was introduced, and firm traction made, but no change in the position of the shoulders could be effected. During all this time, the patient's general condition grew worse and worse, despite hypodermic injections of brandy and other measures, and she died undelivered after three hours and a half faithful trial.

This form of pelvis, the equally contracted, he believed was much more frequently met with than is generally admitted, and that it should receive as much consideration as those forms which depend upon certain general conditions, such as rachitis, malacosteon, etc. The infantile or immature pelvis is explained by an arrest of growth due to some important impairment of the constitution. For the equally contracted and the male pelvis no such explanation could be received. In the male pelvis, or the funnel-shaped, or the Irish pelvis sometimes called, a condition of advanced ossification exists, and indicates a healthy constitution. Barnes regards the equally contracted pelvis as due to the fact that the person is small, but Dr. Taylor believed that it did not necessarily follow that a female of small stature should have a small pelvis. With the exception of some German writers, the subject of equally contracted pelvis had scarcely been mentioned. Velpeau had once said that he had yet to learn that such pelves ever offered an obstacle to successful parturition, but he soon afterward had an opportunity to become convinced that such is not the case. The equally contracted pelvis sustains a normal relation to the size of the body, and the woman having it has the same general structure, and does not differ from health, either in stature or general condition. No positive information can be obtained in regard to the existence of this pelvis until labor has somewhat advanced. The position of the head may assist somewhat. It may be oblique at the superior strait, the occiput may dip at the commencement of labor, and it should do so, for flexion is absolutely and positively necessary. Should complete flexion not take place, a brow presentation, or a face presentation, will usually occur. After delivery is completed, some notion of the condition of the pelvis may be formed by the condition of the head, and the specimen presented gave an excellent illustration of this point. There was marked overlapping of the parietal bones, compression of the frontal bones, and a ball-like appearance of the cranium. Another means for determining whether or not this pelvis is present is pelvimetry. Dr. Taylor did not place much confidence in the various methods of measuring the diameters of the pelvis, and believed that internal pelvimetry could be best accomplished by the introduction of the whole hand. If the hand moves freely in the cavity of the pelvis, the diameter



must be more than three and three-quarter inches. In measuring the outlet of the pelvis, Breisky's method was most valuable.

With reference to treatment, the use of the forceps was almost totally impracticable. Should craniotomy have been performed, version might succeed. Should the child's head rest in the cavity of the pelvis, and the case be seen early, he would perform Cæsaréan section, but if not, he would resort to either laparotomy or symphysiotomy, and he was inclined to regard symphysiotomy as the more acceptable operation.

DR. E. A. JUDSON gave a *resumé* of the clinical history of the case reported by Dr. Taylor, described the successive steps of the craniotomy and the difficulty experienced in attempting to turn the child. A great danger in these cases, he thought, was liability to rupture of the uterus. The most interesting question perhaps was with reference to diagnosis; that is, whether there are any certain means upon which we may rely. He was inclined to think that internal pelvimetry might furnish something in this direction, and then referred to a method recommended by Carl Schroeder for obtaining the diagonally conjugate diameter, as it had been called. It consisted in introducing two fingers, allowing the tip of the middle finger to rest upon the promontory of the sacrum, and then noting upon the index finger the point at which it came in contact with the inner edge of the arch of the pubis. This diameter being obtained, it bears a certain relation to the other diameters, and perhaps in this way a proximate estimate might be formed with reference to the condition of the pelvis. With reference to external pelvimetry, it did not seem to be of much service. He thought that some information might be obtained by resorting to abdominal palpation practised early.

DR. E. L. PARTRIDGE, from a clinical stand-point, suggested that possibly the early appearance of menstruation might lead to the early ossification of the bones of the pelvis, and therefore might be of some assistance in forming an opinion with reference to its general condition. Another fact to be borne in mind was that the first labor is frequently very severe, perhaps necessitating craniotomy, while the second labor is comparatively easy. And this fact might have some weight while endeavoring to reach an opinion as to whether a difficult first labor was probably to be succeeded by labors equally difficult and perhaps dangerous. Practically, he had found that the cephalotribe applied to the delivered head had facilitated delivery of the shoulders. He believed that the equally contracted pelvis should receive more consideration and study than simple cases of deformed pelvis from disease because it occurred far more frequently, and it was very probable that craniotomy and cephalotripsy had been performed more frequently in this class of cases than in any other.

DR. H. J. GARRIGUES thought there was no doubt that diagnosis could be made during pregnancy. Of the external methods to be employed, Baudelocque's instrument offered the most advantages. Internal pelvimetry was difficult to practise, but it might be assumed that if the finger could touch the promontory of the sacrum the pelvis was contracted. In cases in which operative interference was necessary, he believed the following should be considered in the order mentioned: First, gastro-elytrotomy; second, Cæsaréan section, not according to the old method, but according

to the methods recently described in monographs; third, Porro's operation; fourth, total extirpation of the uterus.

THE PRESIDENT directed attention to one important practical point on which we are all liable to be consulted. It had already been alluded to by the author of the paper, namely, that external conformation, form and figure, and size of the patient offered but slight indication of the condition of the pelvis. This is a point which should be constantly borne in mind. He had repeatedly had patients under five feet two inches in height, who had perfectly normal pelves, and had given birth to fine, healthy, and often large children. Again, those patients who have had antero-posterior and lateral curvature of the spine, perhaps also hip-joint disease, have experienced no difficulty whatever in the process of parturition. In some cases, he had been able to form a pretty accurate estimate of the probable diameters of the pelvis, but not always, and oftentimes it was found quite impossible. He then referred to a case in which the woman had suffered from double curvature of the spine and also hip-joint disease in early life; he was unable to discover any deformity of the pelvis whatever, and she gave birth to a child weighing ten pounds and a half before her attending physician could reach her. The President also referred to a case of an exactly opposite character, in which a large, well-developed woman had so small a pelvis that it was with the utmost difficulty that she could be delivered of a child not very far advanced in development. Notwithstanding the proximate estimate which we might be able to make in certain cases concerning the diameters of the pelvis, he regarded it important to be extremely cautious with regard to promising favorable results during parturition even after having made a most careful and thorough examination.

In closing the discussion, DR. TAYLOR briefly alluded to the equally contracted pelvis from a gynecological stand-point, and expressed the opinion that very many cases of uterine displacements were due to this peculiar condition of the pelvis rather than to disease of the uterus itself.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Stated Meeting, Thursday, March 1st, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. W. GOODELL presented the specimens, and reported a case of

### DOUBLE ENUCLEATION OF UTERINE FIBROIDS.

Mrs. B., a Hebrew lady, aged thirty-eight years, and the mother of five children, the youngest five years old, began early in 1880 to have menorrhagia and difficult micturition. Later, her physician, Dr. A. H. McAdam, discovered a uterine fibroid. In January, 1881, Dr. Goodell was called in to see her. He confirmed the diagnosis, and found a fibroid in the anterior wall of the womb, bulg-

ing out the anterior lip of the cervix, which was greatly hypertrophied, but not at all enlarging the os. The sound gave a measurement of six inches. As all remedial measures wholly failed, he admitted her into his private hospital, and on February 6th cut into the tumor by means of Adam's subcutaneous saw, and by enucleation removed most of it. A month later, the fragment left behind descended low enough to be removed without difficulty. The tumor weighed not quite two pounds. At the time of this last operation, a small fibroid was discovered in the posterior wall of the womb, but it was too high up to be attacked. Her convalescence was prompt, and her monthly flux became natural. On October 6th, the sound gave a measurement of only three inches, and she felt well. But in the following March, she again sought his advice for a return of the menorrhagia. A fibroid was now bulging out the posterior lip of the cervix, but not expanding the os. The uterine cavity measured five inches. As all remedies again failed, enucleation was once more proposed, and on February 28th, 1883, the operation was performed for the second time. The posterior lip of the cervix was cut open by the saw without invading the uterine cavity, and after an hour's hard work a tumor weighing one and a half pounds was taken away in fragments. Several very beautiful and perfect fibroids as large as a pigeon's egg were also removed. They were attached to the capsule of the mother tumor merely by loose connective-tissue. About a pint of blood was lost during the operation, but after the removal of the tumor the hemorrhage ceased, and the cavity left behind was not tamponed. The patient is doing very well, although the shock was somewhat profound.

In commenting upon this case, Dr. Goodell remarked that the to and fro linear movement of the saw made it a very efficient instrument for working in narrow channels, and that it had the further merit of lessening the amount of hemorrhage. He now used no other instrument for incising the capsule of fibroid tumors. The history of this unique case had somewhat shaken his confidence in the operation of enucleation, because, since the womb is affected usually with multiple fibroids, some one of these must invariably be left behind, and a second operation may become needful. He believed that in these cases oöphorectomy, as a safer and more sure remedy, had a future before it. He had, in fact, performed the operation four days ago on a lady who was so feeble from prolonged hemorrhage that he did not dare to remove the fibroid by enucleation, which is a more prolonged operation and attended by a greater loss of blood. She was doing very well indeed. For the same reason, not daring to enucleate, he had early last year removed both ovaries for a bleeding fibroid, but, after a remission of several months, the hemorrhage returned, and he will probably have to perform enucleation or hysterectomy.

DR. B. F. BAER inquired if the case in which hemorrhage returned



after oöphorectomy was not of the submucous variety. Ought not the operation to be limited to the interstitial and subperitoneal varieties, where enucleation is not possible? In one case reported by Dr. Byford, of Chicago, a uterine (submucous) fibroid went on increasing and hemorrhage continued after oöphorectomy.

DR. GOODELL, from *a priori* reasoning, would expect less favorable results in submucous tumors, as they are more like polypi in their characters and would be more likely to continue to bleed. The case referred to in which oöphorectomy had failed was of the submucous type, and could have been removed by division of the mucous membrane and enucleation had the patient's condition permitted it.

DR. B. F. BAER narrated the history of a case in which

#### INDUCTION OF PREMATURE LABOR FOR THE RELIEF OF SUPPRESSION OF URINE

was considered necessary. The case occurred in the practice of Drs. Marcy and Meecray, of Cape May, N. J. About the sixth month of pregnancy, a general edema was noticed, and the urine contained considerable albumin and a few casts. The amount of urine passed diminished rapidly, while the proportion of albumin increased and the patient became weak and anemic. Every means was tried to increase the quantity of urine, but without avail. Among the remedies used were a wide range of diuretics and hydragogue cathartics with Basham's mixture. A sudden suppression of urine occurred at eight months, and but four ounces were passed in forty-eight hours; this became solid when heated; headache and spots before the eyes were now added to the other symptoms; a grumous discharge from the uterus had been noticed for a week, and convulsions seemed threatening. Dr. Baer was called in consultation, and he agreed with them as to the advisability of inducing premature labor. A No. 9 flexible catheter was warmed and softened, and was, after great difficulty, introduced between the membranes and the anterior wall of the uterus. The cervix uteri had been lacerated in a previous labor, and was hard and small. Pains of a natural character followed immediately upon the introduction of the catheter. After some hours, the pulse became weak and the patient faint, the os was but slightly opened, and it was considered advisable to administer stimulants, use Barnes' dilators and the Hodge forceps. A dead child was speedily extracted. The latter had been alive in the morning. Four hours after delivery urine was secreted, and in two days the albumin had entirely disappeared. The patient recovered.

DR. DE F. WILLARD reported a case of

#### INDUCED PREMATURE LABOR NECESSITATED BY GREAT EDEMA OF THE LABIA MINORA.

The patient, probably over forty years of age, had been married about one year, and was pregnant with her first child. She suffered from headache, her feet and eyelids were swollen, and her

urine showed one-sixth albumen and contained casts and blood corpuscles. Basham's mixture, diuretics of every kind, diaphoretics, hot-air baths, hydragogue cathartics, and tonics were used without a satisfactory result. Digitalis infusion and jaborandi alone gave a very temporary relief. The patient soon after her first visit called attention to the condition of the labia minora, which were found to be enormously swollen, shining, tense, and pitting on pressure. The urine amounted to from fifteen to thirty ounces per day, and steadily decreased in quantity. The edema of other portions of the body decreased under the use of digitalis, but that of the labia increased. The patient could lie only upon her back with the knees drawn up and as widely extended as possible; the pain was great and constant. Lancet punctures were made with temporary relief. The patient was steadily failing; her pulse was 150<sup>°</sup> per minute. An erysipelatous blush made its appearance, and rapidly spread to the abdomen and thighs. Premature extraction of the child offered the only chance, and was at once performed. Gestation had reached eight months. It was a difficult task, as the labia were five inches in depth. Barnes' dilators and the Hodge forceps were used and delivery accomplished in two hours. The child was dead, and the mother died three hours later.

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## TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

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*Stated Meeting, January 5th, 1883.*

DR. S. C. BUSEY, *President, in the Chair.*

DR. T. C. SMITH read a paper on

### RUPTURE OF THE PERINEUM,

basing his remarks on a case occurring in his practice, wherein the patient, a woman, thirty-eight years of age, had suffered rupture of the perineum fourteen years ago, since which time she had been a great sufferer, and had been attended by several physicians who did not propose an operation for her relief. The results of the operation were satisfactory. Menstruation came on the day after the operation, and occasioned much anxiety; but when the stitches were removed, union was found to be perfect. Dr. Smith insisted upon the early performance of the operation for the relief of the laceration, inasmuch as it entailed no danger to life, and saves women from years of unnecessary suffering. Easy of performance, satisfactory in results, no physician at the present

time is justified in refusing to extend to his patient the benefits resulting from the operation.

DR. ASHFORD opened the discussion. He had not heard all of Dr. Smith's paper. He would first draw attention to the question of primary and secondary operations. Aside from the cases in which, from some peculiar condition of the patient, the primary operation was inadmissible, there was another reason which prevailed to a great extent; it was the feeling of the physician *not* to admit that rupture had taken place, and this feeling led him to tie the knees together, in the hope that union might be obtained. Especially was this true of young physicians. If the accident occurred in the practice of old physicians, it was called unavoidable, while in the case of young practitioners it was liable to reflect upon them. Many cases were delayed because the rupture was not discovered at the time, and this was due to neglect of the physician to make an examination immediately after labor in order to discover whether such an accident had taken place. We especially expected the accident to occur in primiparous cases, yet the swelling, bleeding, etc., obscured the rupture, which after a time was plain enough. Then, again, there might be a central rupture, one not breaking the integument, and only shown by a blue line of effusion beneath the skin. In ruptures not involving the sphincter, *i. e.*, in ruptures of the second degree, all agreed that we should operate at once; but when the sphincter and recto-vaginal septum were involved (third and fourth degrees), the propriety of an immediate operation might be doubted. The apprehension of danger of primary operations was, of course, absorption of septic material, but Thomas and others had held, with good reason, that by operating at once we lessened the surface for absorption. In cases where the rupture was extensive, the primary operation was not, as a rule, a success; still, the cases were better for restoration at a subsequent period, inasmuch as the primary attempt prevented shrinkage of the parts, and especially of the sphincter. He held, therefore, that it was a good rule to operate at once, in all cases, unless the condition of the patient was such as to forbid interference. The general results of rupture of the perineum were of paramount interest to the gynecologist, and while it was true that we met with cases which presented no symptoms traceable to the rupture, there were others whose local and general symptoms were clearly due to the rupture. The denudation of the cicatrix in these latter cases, and closure of the laceration, had a decided moral and physical effect on the woman. Thus, if there were bearing-down pains in the loins, with leucorrhœa, and especially the fear that they were sterile, restoration of the perineum had a marked influence; the spirits of such patients were rendered better, especially if previously they had supposed themselves to be unfitted for sexual intercourse—a supposition of a marked depressive influence, and sometimes leading to serious results. We all know that if a woman believed herself to be sterile, the uppermost idea with her was to have a baby, and this supreme idea had its effect upon her mental condition. Dr. Ashford next spoke of the prevention of the accident, and as to the use of forceps in the production of the rupture. In most of the cases which he had seen the rupture had occurred when the forceps had been used, *i. e.*, when there was need for their use, such as impaction or malposition of the head. Thus, the occiput being behind, and sweeping over the perineum, led to excessive distention and rupture. It



was not fair in these cases to attribute the rupture to the use of forceps, but rather the result of causes demanding the use of the instrument. One of the worst cases he had ever met with, in which the sphincter and recto-vaginal septum were involved, was one in which forceps had been used, eclampsia being present. Primary operation was unsuccessful. Dr. N. R. Smith, of Baltimore, subsequently operated without success. Dr. Ashford had since succeeded by making two operations, first closing the recto-vaginal portion, and then the perineal. He would limit the time in which the primary operation should be performed to twenty-four hours after delivery, but the best time was within six hours.

DR. PRENTISS said Dr. Smith had dwelt mainly upon the importance of the secondary operation, and his remarks rather reflected on the conduct of the physicians who had treated the case before she fell into his hands for not having relieved her by an operation. The question was how far these physicians were to be held responsible, for it was well known that some patients would not submit to the operation when proposed to them. The case reminded him of one of his own, seven years ago, where the patient refused to be operated on until after the climacteric period, fearing lest any future labor would produce a rerupture. And this brought up the question as to the risk run, in subsequent labors, of renewed rupture. Would like information on the subject. Dr. Prentiss always operated at once, unless the rupture extended through the sphincter. In cases of this kind, he did not take No for an answer when proposing the operation; he simply said he would do it, and he did. The pain was slight, the operation easy, and, in his hands, the success had been uniform. He had only had one case involving the sphincter, and this taught him a lesson, inasmuch as he was blamed for neglect. The patient was a primipara, the labor tedious, and was finally terminated, under ether, by the hand, by bringing down the buttocks. After delivery, he was positive that no rupture had occurred, and the child being cyanosed, he first attended to its resuscitation. The nurse, whom he requested to examine the woman to see if there had been any tearing, said there was no rupture. But on the fourth day, the nurse informed him that the patient had had an involuntary movement of the bowels, and upon examination he found rupture involving the sphincter. He reproached the nurse for what he believed to be intentional deception, but she declared there had been no rupture at first. He thought now that the case was one of central rupture, as described by Dr. Ashford, followed by sloughing of the integument. Dr. Prentiss always inspects the parts after labor, exposing them freely to light for that purpose.

DR. C. E. HAGNER.—We know that the head pressing on the perineum for a long time makes the tissues boggy and liable to rupture. The early use of forceps will remove this cause of the accident. He did not believe that stitches would do any good after thirty-six hours. The most alarming-looking rupture he had ever seen recovered perfectly after a primary operation, though at the time the woman was edematous, suffering from albuminuria, and had had many convulsions. Had operated on four cases within an hour after rupture, and obtained perfect union in all. Has seen several cases where the perineum had been restored, and the patients delivered of several children afterwards, without rupture taking place.

DR. FRY had operated on a case six weeks after rupture. On

the fourth day, there was a discharge of blood, which kept up for eight days. Does not think it was menstruation. In this case, the woman was alone during labor, and for forty hours afterwards. She wrapped the child and placenta together in a blanket, and lay quietly in bed until her mother came, who cut the cord, dressed the child, and left it at somebody's door. Always tells the patient when the accident happens. Had seen several cases where the perineum remained intact during subsequent labors.

DR. ASHFORD remembered a case where, in a subsequent labor, after secondary operation, the rupture did not take place in the line of union, but adjoining it. Thought ruptures would be more apt to occur after secondary than after primary operations.

DR. J. T. JOHNSON said it would be much better for the reputation of the doctor and comfort of the patient, if a thorough examination should be made after all labors, to ascertain if a rupture existed. The modesty of the patient should yield in this matter. His experience was not in accord with the statement that the profession was a unit in favor of immediate operations for restoration of the perineum. He related a case where extensive laceration occurred, but the doctor in attendance only said he never "bothered about such things; they all healed up." Others felt the same way. But they don't all "heal up," and the life of the patient is endangered by the large raw surface, which favors septicemia by purulent absorption. Supporting the perineum for a long time with the hand might favor the very accident which it was intended to prevent. The forceps, instead of causing rupture, frequently is the means of saving the perineum. When skilfully used, much more good is done by supporting the head, and the perineum will take care of itself. He had used the forceps many times, and had occasionally ruptured a perineum in a primipara, but held that more good than harm was accomplished, as by the immediate operation the parts were at once restored, while the indications for the use of the forceps had been fulfilled. The perineum should be restored immediately after labor was completed. Had known of several cases analogous to that of Dr. Prentiss, in which the perineum sloughed after labor. He would advise that the operation be done well. Put in stitches as deep as possible, get firm support, and bring the parts closely together. Immediate operations sometimes failed, because they were too hastily and imperfectly performed.

DR. SMITH, in closing the discussion, said that it would be well, in a medico-legal point of view, if it could be clearly placed on record, that sloughing does occur after labor, as described by Drs. Prentiss and Johnson.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Wednesday, January 10th, 1883.*

DR. MATTHEWS DUNCAN, *President, in the chair.*

### SACRAL TERATOME.

DR. HEYWOOD SMITH exhibited a fetus of about five months' intra-uterine age, having an outgrowth from the end of the coccyx

about three and a half inches long and seven inches in circumference. This consisted mainly of embryonic tissue: small round cells, with a faint fibrillar arrangement. From the coccyx were traceable four vertebrae, consisting each of a cartilaginous body with spinous processes.

#### PORRO'S OPERATION.

DR. HEYWOOD SMITH exhibited a uterus removed by Porro's operation. The patient was a primipara aged twenty, the conjugate diameter of whose pelvis was one and three-quarter inches, or less. She had been in labor two days, and attempts at delivery by craniotomy and cephalotripsy had been made without success. The performance of Porro's operation occupied nearly an hour. The specimen showed clearly the rugae on its peritoneal surface.

DR. FANCOURT BARNES said that Müller's modification of Porro's operation was a bad one, requiring a large incision and making the application of the ligature more difficult. Porro's original plan was better.

#### SUPERFETATION (?).

DR. ONTHWAITE exhibited a body looking like an ovum of about a month's intrauterine age, which had been passed within thirty-six hours after the birth of a full-time child.

The specimen was referred to a committee for examination and report.

#### NOTES OF A SPECIMEN OF ANTEFLEXION OF THE UTERUS.

A paper by MR. W. S. A. GRIFFITHS on the above subject was read. The specimen was one in the museum of the Sussex County Hospital at Brighton. The uterus was sharply anteflexed, was fixed, and the adjacent parts agglutinated into one mass by firm old adhesions. The uterine cavity was dilated into a sac the size of an almond, and contained the remains of a clot. The patient had died from peritonitis, while menstruating. Except for a previous attack of peritonitis, she had had remarkably good health. She was unmarried, and had never complained of painful menstruation until asked, during her fatal illness, when she said she had pain toward the end of the periods. The bend was at the junction of the body and cervix. The cervical canal was not contracted, but rather larger than usual. There was no atrophy of the uterine wall. The author rejected obstruction as a cause of the dilatation, which he thought due to chronic congestion. He thought the specimen interesting, as showing that acute flexion of the uterus might exist without interfering with the nutrition of the uterus, or with the general health.

DR. ROUTH thought this specimen did not prove that the canal of a flexed uterus was not constricted; for the patient was menstruating, and the canal became dilated during menstruation; further, the uterine cavity was here ulcerated, and this might have enlarged the canal.



DR. GRAILY HEWITT said that without contraction of the canal there might be virtual obstruction from the coaptation of its opposite walls, and from the swollen congested condition of the uterine tissues resulting from the flexion. This was proved by clinical facts.

DR. HERMAN agreed with Mr. Griffiths that this case showed no evidence that the dilatation was due to obstruction. There was no angulation nor narrowing of the canal, which was bent in a curve. The uterus was fixed, and if it were admitted that here the dilatation was due to obstruction from flexion, it did not follow that the same effect would be produced in a uterus which was free to move.

MR. GRIFFITH said that microscopic examination showed that the apparent ulceration was due to the patient having just ceased menstruating.

CASE OF EXTIRPATION OF THE UTERUS AND APPENDAGES FOR  
EPITHELIOMA OF THE CAVITY,

by MR. KNOWSLEY THORNTON. The author thought that, these operations being still on their trial, it was a duty to fully report every case. This duty was not enough recognized. Many cases had been reported at the time of operation, but not further. One case had been publicly referred to as successful, without correction by the operator, although the patient died within a day or two of operation. Others had been reported when immediately successful, but died within a few months from recurrence, without public record of the fact. This reticence indicated that they were rarely immediately successful, and when they were, gave but a short interval without recurrence. He argued that speedy recurrence was to be expected. He had refused to operate in many cases, and thought that the only justifiable ones were those in which the disease was confined to the cavity or body of the uterus. He then gave at length the history of such a case, with details of the operation, and after-progress to death on the fifth day. He referred to the statistics of the operation by the abdominal and vaginal methods. In any future case he would choose the vaginal method, and would avoid the use of ligatures altogether, leaving pressure forceps on for the first few days. These would serve as drains, and at the same time by their weight tend to draw together the wounded surfaces.

DR. EDIS suggested that, in the abdominal operation, septic infection might be avoided by removing the uterus per vaginam.

DR. AVELING said that drainage was, he believed, first advised by Purman in 1706, and in England by Johnson in 1769.

THE PRESIDENT had taken part in three of these operations, all of which proved fatal. He was struck with the greater facility of the vaginal operation.

TRANSFUSION.

A paper on this subject by MR. C. E. JENNINGS was read. The author remarked on the dangers and difficulty of transfusion, which he thought too grave to be undertaken by a practitioner alone, at a moment's notice. Defibrination of the blood rendered its

nutritive value very small; but the value of transfusion depended primarily not on its nutritive, but on its *dynamic* effect. This latter could be procured with greater certainty by the intravenous injection of a large quantity of saline fluid. He had invented and elsewhere described a siphon for such injections. This instrument he had now modified so that blood transfusion might be combined with the saline injection. The flow of saline fluid into the recipient's vein having been established with the siphon, the blood-donor's vein was opened with a trocar and canula specially devised for the purpose, and the blood by a tube conducted into one limb of a Y-shaped glass tube, through the other limb of which the saline solution flowed, and by this was carried on into the recipient's vein. Coagulation was prevented by the addition of a few drops of liquor ammonia to the saline solution. Should the blood-donor become faint, by turning a stop-cock, the current could be reversed and the saline solution made to flow into the donor's vein.

DR. AVELING thought the interest of the paper was in the proposal to substitute saline fluid for blood. He thought the apparatus a bad one; there was no certainty that blood would flow through it, no way of telling whether it was flowing, or of measuring its quantity. The reversal of the current he thought dangerous, tending to carry clots into the donor's circulation. Life might sometimes be saved by auto-transfusion, raising the patient's feet high above her head.

DR. ROUTH said that Mr. Jennings's solution contained potash salts. It had been found by experiment that the injection of potash salts was poisonous. The valves in the donor's veins would prevent the proposed reversal of the current.

DR. GRAILY HEWITT thought the chief point in the paper was the attention directed to the dynamic effect of transfusion. This he thought was probably very important. There was great difficulty in deciding when the operation was necessary. Patients, after post-partum hemorrhage, might rally and yet perish some hours later without further loss of blood.

MR. FENTON-JONES thought Mr. Jennings's siphon an admirable instrument. The solution had been used with success, and therefore was not poisonous. He thought the current of saline fluid would act as a *vis a fronte* and carry on the blood.

DR. FANCOURT BARNES said that he had found it difficult to get the blood to flow from the donor's arm, even with Roussel's instrument.

THE PRESIDENT regarded transfusion as little more than a hopeful proceeding, demanding encouragement and study. Patients who survived it were often spoken of as having been saved by it; a manifest mistake. In many cases it had caused death. Sets of cases of transfusion, occurring in single practices, within a limited time, were often published; he could not admit that extreme danger occurred so often. Injections of plain water had been used in cholera with splendid but temporary benefit; he would like to see it have a fair trial in cases of hemorrhage. The attempt to use blood introduced most of the difficulties and dangers of the operation, and these were increased by complicated apparatus. He would use any good clean syringe, preferably a glass one.

MR. JENNINGS only advocated blood transfusion for the minority; he thought it dangerous. He had found by experiment that a few drops of liquor ammonia would prevent coagulation. He thought that the collateral circulation through venous anastomoses would allow the saline fluid, when the current was reversed, to enter the donor's vascular system. The amount of blood taken should depend upon the effect of its loss on the giver, not on measurement by ounces.

DR. HERMAN said that in the London Hospital Maternity Charity, saline intravenous injection had been used in four cases of puerperal hemorrhage, of which two recovered and two died; water once, and the patient recovered.

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*Annual Meeting, Wednesday, February 7th, 1883.*

DR. MATTHEWS DUNCAN, *President, in the Chair.*

#### PERIMETRIC ABSCESS.

MR. GRIFFITHS showed a specimen of retro-uterine perimetric abscess due to the opening into Douglas' pouch of a number of rectal fistulae: a cause of these abscesses he believed not previously described.

#### EPITHELIOMA OF CERVIX REMOVED DURING PREGNANCY WITHOUT CAUSING ABORTION.

An account of this case by DR. GODSON was read. The patient, aged thirty-five, had suffered for twelve months from yellow or watery, fetid discharge, latterly from hemorrhage and occasional pain. Till then she had been healthy. The cervix was enlarged and ulcerated; the uterus mobile. The cervix was removed by the *écraseur* four days after the cessation of hemorrhage believed by the patient to be menstrual. No bad symptoms followed. Nine days after the operation, a sound was passed into the uterus, and four days after this a fetus of about eight weeks' development was expelled. The author remarked that he believed the abortion was due to the use of the sound, and not to the operation. He advocated the removal of cancerous growths, if possible, at any stage of pregnancy. His case supported the view that cancer favored the occurrence of pregnancy, the patient not having been pregnant for six years previously. He remarked on the patient's previous good health, the late onset of pain, and the importance of not pulling down the cervix when using the *écraseur*.

DR. ROUTH remarked on the advantages of early removal of the disease during pregnancy when possible.

DR. PLAYFAIR thought cancer of the cervix more prone to occur in women in whom that part was previously unhealthy. When pregnancy occurred in a cancerous uterus, the cancer often grew with extreme rapidity. He thought the use of the *écraseur* to amputate a cancerous cervix was the worst way of doing it: by this the superficial part only was shaved off, and the diseased base left. The best operation was that of Marion Sims, which he (Dr. Playfair) had done repeatedly with very satisfactory results.



DR. HERMAN thought that if cancer of the cervix favored conception, cases of the complication of cancer with pregnancy would be much commoner than they were. The galvanic *écraseur* not only cut through the cervix, but burnt the tissues on each side for some little distance from the line of division. Where the wire tended to slip, it was his practice to cut with scissors a shallow groove for it to lie in.

DR. ROGERS mentioned a case in which removal of a cancerous cervix was followed by abortion. He thought that in this operation Douglas' pouch might be opened, notwithstanding every precaution.

DR. EDIS remarked on the practical importance of the early diagnosis of uterine cancer. Where there was doubt, a second opinion ought to be at once procured.

## REVIEWS.

LEHRBUCH DER GEBURTSHÜLFE FÜR AERZTE UND STUDIRENDE. VON OTTO SPIEGELBERG, beendet von DR. MAX WIENER. Zweite neu bearbeitete und vermehrte Auflage. Lahr, 1882.

[A Text-book of Obstetrics for Practitioners and Students, by OTTO SPIEGELBERG, concluded by MAX WIENER, M.D. Second revised Edition, pp. 798; 148 illustrations.]

Spiegelberg's book on midwifery acquired at once a well-deserved reputation, notwithstanding the great number of good obstetrical books already in print. This is easily accounted for by its peculiar excellence. While it equals the best text-books in every respect, it surpasses them all, in whatever language written, in one particular. It is the most scientific book on midwifery. Midwifery is treated as an art and as a science. Some practical teaching in the book will perhaps not be generally approved, but every one will admit that nowhere can such an amount of scientific investigation and information be found. Everything of value, in the German, English, French, and Italian literature of the subject, is considered, so that, in regard to literature, it can be considered an encyclopedia. The manner in which the subject is treated must impress the reader with its importance and its intimate connection with other branches of medicine. It has often been observed that no one can be a good obstetrician who is not well versed in the other branches of medicine. By reading this book every one will agree to the truth of this observation. Although the literature is studiously compiled, the author has preserved in every chapter the independent judgment gained by a large experience.

Those who consider obstetrics as a routine business which can be absolved in a humdrum way, will not find much satisfaction in the book. Also as a concise text-book it is not very commendable. The student or young practitioner will hardly find what he most needs; but when he wants any information about any particular chapter in midwifery, he will find the book unrivalled. The best informed specialist will find something noticeable besides the exhaustive references to literature.

By placing the book on so high a standard, a new edition was needed sooner than would otherwise have been necessary to keep it in the same foremost rank, as new contributions to this inexhaustible subject are always coming in. Dr. Max Wiener has done a substantial service to the profession by finishing the task left incomplete by Spiegelberg. As a pupil and friend of Spiegelberg, and practising the same specialty, he was the man most fitted to do this, and he has done it in a manner alike honorable to teacher and pupil. Dr. Wiener adheres faithfully to the teaching of his former instructor, and where he differs, he first gives Spiegelberg's opinion and then his own. The book is therefore but little changed, except that it is a little more condensed, and that all the newest contributions in literature are taken into consideration.

The chapter on puerperal fever is very interesting. The etiology, the pathological changes and clinical experience are well digested, and the literature of these subdivisions duly noticed. Preference is given to the bacterial theory, but the question is left open as to whether bacteria or a chemical poison is the cause of puerperal fevers.

The most glaring blemish is the style in some places. Many who only read German with the assistance of a dictionary will often find difficulties. They will be bewildered by such phrases as the following, page 652, "It is, however, possible—and the clinical experiences of on the average favorable course of such septicemias, if only the infesting source is removed, confirm it—that the body becomes intensely infected by a lasting and continuously increasing absorption of the chemical products formed by the germs of decomposition: possible, too, are in consequence thereof diffuse suppurations in very enervated individuals with morbid blood-vessels, which cannot resist the deeper intrusion of those germs and their products, to which attention has been already paid, § 838, still more likely that by the operation of the bacteria of decomposition on the venous thrombs lying bare on the seat of placenta, or casually on another place, decomposition of them, and by carrying away of the putrid decayed coagula, embolic processes and consequently phlebitic septicemia arises." For a German who has waded through still more formidable phrases the difficulty is not so great as for one who has been accustomed to the precise and lucid phraseology of French and English authors. Those who can overcome this difficulty, however, will find much satisfaction in studying the book.

JOSEPH KUCHER.

MANUAL OF GYNECOLOGY. By DAVID BERRY HART and A. H. BARBOUR. 2 Volumes, pp. 661, 1 Lithograph, 8 Plates, 402 Woodcuts. New York: Wm. Wood & Co., 1883.

This work, which was reviewed in full in the February number of the JOURNAL, and which has not heretofore been published in this country, has been issued by the above firm in a most attractive form, so that American readers now have the opportunity of possessing it as part of "Wood's Library" for 1883, at a merely nominal price.

The book is in two volumes, handsomely bound, and well printed on fine paper. For a review of its scientific qualities, we refer to the February number. It is unquestionably one of the most original works on gynecology which has been written during the past decade.

A COMPEND OF OBSTETRICS. By HENRY G. LANDIS, A.M., M.D., Prof. of Obstetrics and Diseases of Women, in Starling Med. Coll. Illustrated, 106 Pages. Philadelphia, P. Blakiston, Son & Co., 1883.

This little book, one of a series of "Quiz Compendes," published by the firm mentioned, is worthy of the reputation of its well-known author. Its questions are well chosen, its answers concise and clearly expressed, its scope wider than that of others of its class.

While we think that, as a rule, such compendia offer a premium to laziness, and that, if used at all by the student during his course of study, they should be so only in connection with one of the larger works on obstetrics, we have no doubt that many students will find in it a most valuable aid in preparing for examination.

## ABSTRACT.

1. Le Bec (Paris): Concerning the remote Results of Ovariectomy (*Archives de Tocologie*, Oct. and Nov., 1882).—The author laments the lack of investigation in this direction. One cause may be that the persistence of the normal condition after ovariectomy is the rule, excepting in cases where the operation was performed for cancer, in which a recurrence is fatal. The author proposes to record the effects which he has observed upon menstruation, fecundity, the general condition, and the production of hernia, first, in cases where single ovariectomy has been performed, and, second, where the double operation has been done. Very often menstruation remains unaffected by the single operation. In some cases, however, great relief to previous menstrual troubles has been experienced. The menstrual flow may take its exit per vaginam or per cicatricem abdominis. The latter occurs in some cases where the clamp has been used. One curious case is cited in which Spencer Wells had removed both tubes and a portion of the left ovary. The woman menstruated regularly after the operation. (This disposes of the theory that the menstrual blood proceeds from congested Fallopian tubes.) Conception follows the operation frequently, but is somewhat less likely to occur than when both organs are intact. Twins have been born several times, and in Bantock's case one was a boy, and the other a girl. The question of sex is evidently not influenced by the removal of either ovary. The precise effect upon the general health is difficult to say. In cases where double ovariectomy has been performed writers differ as to the influence upon menstruation. Some affirm that the flow has continued, others that it ceases entirely. If the followers of those who say that ovulation has nothing to do with menstruation are correct, there appears to be no reason why menstruation should not continue. (The clinical fact is, however, that as a rule it does not.) Beigel has found supernumerary ovaries twenty-three times in five hundred autopsies of adults. Tillaux had a case in which double ovariectomy was performed, and the patient afterward menstruated twice, at intervals of six months. In the other months, and at the corresponding epochs, she had *flashes of heat*, and great fatigue. After the



second flow, there was no re-appearance, and she remained quite well. Atlee, Storer, Baker Brown, and others have reported cases in which menstruation did not cease after double ovariectomy, but in almost every case the re-appearance was at irregular intervals, and the menopause established before many months had passed. Hegar's explanation of the recurrence of menstruation is based upon his statement that the continued congestion of the genito-urinary vessels, and those of the pelvis and of the abdomen, at each period prior to the operation, has produced an enlargement of the calibre of those vessels. A certain softness in the walls of the uterus follows, which predisposes to the sanguinolent suffusions, and to the consequent feeling of pain and heaviness which often occur. As regards Battey's operation, he thinks it is yet too young to enable us to make general statements or inferences. He has a table of fifty-nine cases of this operation, in fifty-three of which the menopause resulted. Ventral herniæ after ovariectomy are not at all rare. Bantock thinks they are most frequent after the use of the clamp and drainage tubes. The intestines usually slip through an opening made at the lower angle of the cicatrix. In regard to the recurrence of a simple ovarian cyst, a case is on record (Weinlechner's) where double ovariectomy was performed, menstruation continued, a new tumor developed, and, at the end of eight years, when it was removed, it had reached the size of a man's head. Elements of an ovary were found in the tumor, and the conclusion arrived at was that at the original operation one of the ovaries had not been entirely removed. In regard to the removal of both ovaries, Dolbeau's advice is—if the patient be young, and the tumor has developed rapidly, and if at the operation the second ovary has a suspicious appearance, it should be removed. In regard to cancer of the ovary, its diagnosis is extremely difficult, often impossible. All the concurrent facts in connection with the development of the tumor must be considered, and if a diagnosis of cancer is decided upon, one should abstain from operating. Atrophy of the uterus occasionally results, and has been observed by Battey and Hegar. Most of the best authors concur in believing that sexual desire is unaffected by the operation. The general condition is not greatly altered by the operation. The patients having reached maturity at the time will, as a rule, show only such physical changes as are peculiar to advancing age. Hence atrophy of the mammary glands in some cases, embonpoint in others, harshness of voice, and the increased growth of hair upon the face may either be placed under this category, or considered as anomalous conditions from which no general deductions can be drawn.

AND. F. CURRIER.

### ITEM.

THE increasing demand for PRACTICAL INSTRUCTION IN GYNECOLOGY at the NEW YORK POLYCLINIC has necessitated the appointment of an additional Professor of Gynecology to that flourishing institution. DR. JAMES B. HUNTER, Surgeon to the New York Woman's Hospital, has received the appointment, and, together with Profs. Mundé and Wylie, will hereafter conduct that department.

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### [THE SYMPTOMS AND DIAGNOSIS OF MALARIA IN CHILDREN.

BY

L. EMMETT HOLT, A.M., M.D., New York,

Attending Physician to the North-Western Dispensary in the Department of Diseases of  
Children.

(Concluded from p. 218.)

*The derangements of the nervous system* in children depending upon malaria are numerous. Neuralgias, though by no means so frequent as in adults, yet do occur. I have notes of several cases of the supra-orbital type. The epigastric pains are, I think, often to be regarded as purely neuralgic. Schmiedler records a case of sciatica in a child of two years and a half recurring in paroxysms of a tertian type until quinine was administered. I have notes of ten cases in which neuralgic pains in the extremities were prominent; in two cases it was for these that the patients were brought for treatment.<sup>1</sup> In two instances the pains were associated with very marked hyperæsthesia of both lower extremities, especially acute in the thighs; here handling the parts gave so much pain that they cried out. All these cases were in patients presenting other well-marked symptoms of malarial poisoning and were promptly relieved by quinine.

Motor disturbances are less frequent than the sensory. I have met with three cases in which paresis of the lower extremities was present. In two cases it was associated with severe pains, and improved rapidly under anti-periodics

<sup>1</sup> See case V.

until a perfect cure took place. The third case was not traced; when last seen there was some improvement, but some lameness existed. Various spasmodic disorders have been observed as complications. Cases of torticollis of malarial origin in children have been recorded by Thornberry, Schmiedler, and Bohn. My friend, Dr. Cauldwell, who had charge of my clinic in my absence last summer, met with a case in a girl, seven years old. It came on with acute febrile symptoms and had existed two days before the patient was seen. It was promptly relieved by the use of antiperiodics. The only case I have myself seen, has come under my observation since I began the preparation of this paper. It occurred in a boy of eight years. Every afternoon about one o'clock he had fever and his neck became perfectly rigid and rotated to the left side. Both symptoms lasted until he went to bed. On awaking in the morning he was well and the neck was perfectly mobile until the time of the paroxysm. He had an enlarged spleen and other symptoms of malaria. The paroxysms were immediately controlled by quinine, and up to the present time they have not returned.

I have seen chorea as a complication of malaria in two cases in which some etiological connection could be traced. May it not be that this occurs oftener than we imagine, and that the very prompt improvement which takes place under the use of arsenic is in part explained by this fact?

Epilepsy and malaria have been associated in one case; this was probably a coincidence.

Of nervous origin certainly are to be considered the disorders of micturition which have been mentioned as existing in fifteen cases. The cases of malarial asthma might also be classed under this head.

Among the *other complications* occasionally met with was vaginitis, which was seen in three patients. It seemed to result only indirectly from the general debility produced by the malarial poisoning. In one of these, frequent small hemorrhages occurred from the vagina. Hemorrhages from the gums I have seen in two cases and epistaxis in one. None were severe.

Nephritis was seen twice; in one case it was mild and disappeared in a short time under treatment. The urine in this



case was scanty, about four ounces in twenty-four hours, sp. gr. 1016, and contained a small quantity of albumen, hyaline and blood casts, and also blood and pus corpuscles under the microscope. The second case also occurred in a boy of four, who came under observation on the fourth day of his illness with a temperature of  $105\frac{3}{4}^{\circ}$ . About five days later, just as his malaria was being controlled, almost complete suppression of urine took place, only three ounces being passed in forty-eight hours; persistent vomiting had been present for two days previous. There was no dropsy at any time. The examination of the urine showed: sp. gr. 1014, color reddish-brown, albumen about ten per cent bulk, and under the microscope large numbers of hyaline, granular and epithelial casts, granular matter and blood in large amount. He subsequently passed out of my hands, was circumcised by another doctor for retention, under whose treatment he died comatose, the mother told me, on the sixteenth day of his illness.

I have seen urticaria in two cases. Jaundice I have never met with, nor did Bohn among four hundred and thirty-five cases. Herpes about the mouth is not uncommon. Tonsillitis I have seen associated with malaria in a few cases.

The *prognosis* of malaria in children is good in the vast majority of cases. The acute attacks are usually readily controlled, provided only the patients can be made to take and retain the quinine or some of its substitutes, which is often a matter of a great deal of difficulty. When the disease is seen in its chronic form the system has usually become so saturated with the poison that, although we may relieve the symptoms for the time, relapses take place unless the medicine is continued for a long time, or the patient is removed from the malarial district. Neither of these latter conditions can be often fulfilled in dispensary patients and hence relapses occur in an immense number of the cases. The general impression among authors seems to be that these are more frequent in children than in adults. Griesinger found relapses in sixty-four per cent of the cases from one to ten years of age; and in thirty-eight per cent of those from twenty to thirty years.

The case which proved fatal by a complicating nephritis has just been referred to. The following is the only other fatal case I have seen, and is reported in order to impress the fact

that even in this climate an uncomplicated intermittent fever may produce death.

CASE XVIII.—Lena M., ten years, came to the Dispensary Sept. 4th, 1882. She had lived on Staten Island until ten days before, when she came to the city. Was well until five days ago when she was taken in the afternoon with a severe chill followed by high fever. The fever had continued since, with morning remissions and evening exacerbations every day. The chill had not been repeated until this afternoon, when it came on tolerably well-marked. She complained, during the exacerbation of the fever, of pains in the back and extremities. Vomited occasionally. On examination she was found very weak, hardly able to walk. All the muscles in a state of tremor. Spleen greatly enlarged; axillary temperature  $106^{\circ}$ . Ordered cinchonidia gr. xl. a day, patient to be put in bed and kept there.

The following facts were learned from the aunt who came two days later for a death-certificate. She took her medicine regularly and kept it down, rested poorly on the night after her visit to the Dispensary, but the next morning felt so well she was allowed to get up and seemed to be free from fever. Vomited once. Lay about on the lounge the greater part of the day, feeling weak and very tired. Bowels moved and water passed normally. She took a little food, without much relish, however. About 7.30 in the evening had a very severe chill so that she shook, lasting about half an hour, followed by very high fever. Great pains in back and legs; no vomiting; mind clear. Took medicine at ten o'clock and kept it down; no marked dyspnea noticed; about an hour and a half later "great cramps in the stomach," so she groaned and rolled off the lounge where she was lying, and died easily in a few moments. Up to this time she had been lying quietly.

Autopsy made eighteen hours after death.

Head not examined.

Extensive adhesions over a great part of the left pleural surface. No adhesions on the right side. Both lungs showed very marked edema and congestion, the left a little more than the right, but were in other respects normal.

About half an ounce of clear serum in pericardial sac. The heart was flabby, empty and showed no valvular disease. Liver seemed enlarged and was markedly hyperemic. Spleen very much enlarged, measuring  $6 \times 4\frac{1}{2}$  inches. It was of a dark color, friable and intensely congested.

Kidneys seemed normal to naked-eye examination.

With reference to the *diagnosis* of malaria in children, it is evident from the foregoing that there is no single symptom which can be regarded as pathognomonic. The history of the symptoms is often far more important than the symptoms themselves. Yet we must not lay too much stress on period-

icity. I have seen many well-marked cases in which it was wanting. The enlargement of the spleen is without doubt more important than any other single symptom; but this I have found absent in nearly one-seventh of the cases. Next in value to this symptom I would place the existence of fever, which careful thermometrical observation will show to be present in most of the cases at some time during the day, usually toward evening. The peculiar drowsiness with frontal headache, the severe epigastric pains, the brownish-yellow coating of the tongue, the complete anorexia, the constipation of older children, the looseness of the bowels of the younger ones, the anemia and the peculiar sunken expression of the face with the dark rings about the eyes, are about all the other symptoms I have found valuable as a means of diagnosis.

The recognition of the irregular or masked forms is often more difficult, because the fact of the frequent dependence of these disorders upon malaria is not appreciated, even in a district so malarial as New York.

Thus the bronchitis, the asthma, the neuralgias, the torticollis, the urinary and gastro-intestinal disorders, may present nothing in themselves which at first would excite a suspicion of malaria. The fact of their dependence upon this is to be established mainly by four points:

- 1st. Periodicity in the symptoms.
- 2d. The co-existence of splenic enlargement.
- 3d. The failure of the usual remedies to relieve the symptoms.
- 4th. Their prompt disappearance under the use of anti-periodics.

The *differential diagnosis* of malaria in children is to be made from intestinal worms, dentition, gastritis, gastro-enteritis, bronchitis, pneumonia, the exanthemata, typhoid fever, and meningitis.

The coated tongue, the deranged bowels, the abdominal pains and the slight fever, are not infrequently referred to worms. The administration of anthelmintics is sometimes the only means of establishing the diagnosis.

An examination of the gums will usually settle the fact of dentition. The gastritis which is so often accompanied in young children by a considerable febrile disturbance, and with



frequent vomiting and abdominal tenderness, I have found extremely difficult to differentiate from malaria. Often nothing but the effect of treatment will decide the question. The spleen should always be examined in doubtful cases, and the symptoms closely watched for any periodicity. The same may be said of many cases of gastro-enteritis.

In differentiating between the pulmonary congestion which accompanies malarial fever and the invasion of pneumonia, there must always be a degree of difficulty. The condition of the lung in the two cases is very nearly, if not quite the same. The temperature in both is high, the pulse and respiration rapid. Either may begin with a chill or convulsion. The pain and tenderness in the region of the spleen or the liver may be thought to be pleuritic. The enlarged spleen and liver, and the consequent compression which these make upon the lung, give rise to dulness, which may be mistaken for consolidation of the lower lobe of either side. The auscultatory signs may be identical in both diseases.

To distinguish between them I have found two points of especial value. The amount of general prostration which exists in pneumonia is much greater than that which I have found in the malarial cases. This want of correspondence between the temperature, respiration and physical signs in the chest on the one hand, and the general symptoms on the other, forms a striking picture and should always arouse the suspicion of malaria. In two or three cases I have been able to make a correct diagnosis at the first examination by this fact. The second point is the existence of splenic enlargement. This will almost invariably be found, as these cases are acute, and it is only during the paroxysm that real obscurity exists. The difficulty of deciding positively regarding the condition of the spleen is much increased in children too young to take a forced inspiration. As the disease advances, the course of the temperature, and the variable character of the physical signs in malaria, place the diagnosis beyond all questions.

The onset of measles is not often mistaken for malarial fever. An error is much more likely in the case of small-pox or scarlatina. In some cases we are obliged to wait for the eruption before making a positive diagnosis; but usually the course of

the temperature, the fact that any one of these diseases is prevalent, and the condition of the spleen are sufficient data.

The headache, the attacks of drowsiness, the slight fever, the irritable stomach, the constipation, and the cachexia may lead to the opinion that tubercular meningitis is developing; while in the acute cases the initial convulsion, the high fever and the hyperesthesia, when taken with drowsiness, headache and stupor, may cause cerebro-spinal meningitis to be suspected. The symptoms above given must here be relied upon for the diagnosis; the especial points being periodicity in the head symptoms and the condition of the spleen. The *experimentum crucis* is the administration of a few full doses of quinine.

Still more difficult is it to distinguish between typhoid and malarial fever. The mistake is much more often made of regarding cases of typhoid as malarial, than *vice versa*. Typhoid in children is usually milder than in adults; its course is shorter, the temperature is more likely to be high at the outset and the eruption is more often absent, especially in the mild cases. Prof. Janeway has called attention to the fact which he has often observed in epidemics of this disease in institutions, that in quite a considerable number of cases where it has come on with well-marked symptoms at the outset, it has aborted after four or five days or a week. Others beginning in the same way proved fatal, and autopsies revealed the characteristic lesions of typhoid. These considerations, taken in connection with the fact that bronchitis, looseness of the bowels, splenic enlargement and abdominal pains and tenderness, are prominent symptoms in both diseases, show how exceedingly difficult it may be at times to distinguish between typhoid fever and malaria. The course of the temperature and the effect of quinine are about all the differential points we have. A normal morning temperature, and an evening one below 102° on the third or fourth day of the disease almost certainly excludes typhoid. The different etiological factors should be carefully weighed in every doubtful case.

From the foregoing discussion the following conclusions are drawn :

1st. Malaria in early life presents symptoms peculiar to that period, and differs from the same disease in adults as widely as does pneumonia.

2d. The classification of the cases as remittent or intermittent, and the division into hot, cold and sweating stages as in adults, leads to misapprehensions regarding the course of the disease and confusion in diagnosis.

3d. In any acute febrile disease presenting an unusual course the spleen should always be examined, especially in a district as malarial as New York.

4th. In obstinate cases of diarrhea or bronchitis not affected by ordinary remedies, especially if these symptoms show a tendency to periodicity, malaria should always be investigated as a possible cause.

5th. Spells of drowsiness and frequent attacks of epigastric pains should always excite suspicion.

6th. In children, it is even more necessary than in adults carefully to interrogate every organ before making a diagnosis where the symptoms are at all obscure.

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THE VALUE OF BISMUTH IN THE TREATMENT OF  
ULCERATIVE STOMATITIS AND NOMA.

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IN presenting a paper on the value of bismuth in the treatment of ulcerative stomatis and noma, in reply to Dr. Constantine J. Macguire's on "Bismuth as a Specific for *Cancrum Oris*," published in the *Medical Record* for Feb. 3d, 1883, I have no intention of writing an exhaustive paper on the subject, but merely one to draw attention to some statements of Dr. Macguire's that seem to me to be incorrect, viz., the quality and quantity of the literature, the diagnosis, and the specific action of bismuth.

I wish to preface my remarks by saying that the conclusions arrived at in this paper are based on my experience in the Nursery and Child's Hospital since Dec., 1881, also that, if my memory serves me rightly, I read in the *Daily Times*, during July or August of last summer, a report of a paper read before the Yorkville Medical Association by Dr. Macguire on this subject, and being struck with what seemed to me a wonderful result, and knowing that bismuth could not poison, I intended to have it tried when I came on duty. But I was forestalled by my colleague, Dr. Edward L. Partridge, and its use was begun early in September, 1882, and has been continued, more or less, up to the present. With what result, the cases I am going to give will show. I will also give a short resumé of the cases that can be collected for the first nine months of 1882 before we knew of bismuth.

The word noma (*νεμω* to eat away) was applied to ulcerative disease of the month as far back as the time of Galen, but it was not until the writings of the Dutch physicians (Baltus, Vande-Voorde, etc.) at the end of the 17th century, that it was applied to that form of gangrene of the face to which we apply it at present. Following them came Van Swieten<sup>1</sup> who is

<sup>1</sup> No. 2.

said to have confounded noma with the trouble of the mouth produced by scurvy and the milder forms of stomatitis. Then came the papers by Poupart (1699) and Saviard (1702), based on their experience in Hôtel-Dieu in Paris. From this time nothing seems to have been done of importance until we come to the early part of the present century, when we find Underwood<sup>1</sup> writing in 1800 a short but distinct description of noma under the name of "Gangrenous Erosion of the Cheeks." But we are indebted to Richter<sup>2</sup> in 1828, in his paper on "Der Wasserkrebs der Kinder," for the first clear and distinct description of noma. He was followed by Wigard<sup>3</sup> in 1836, who was followed by Taupin,<sup>4</sup> Löschner,<sup>5</sup> Jourdes,<sup>6</sup> Bruns,<sup>7</sup> and by the very able chapters in the works of Fr. Barrier, and Rilliet and Barthez. From this time to the present all the works on diseases of children that I have been able to examine give a chapter to the subject, some of which are very complete (Meigs and Pepper, Gerhardt, Bohn, in Gerhardt's Handb.), and besides the excellent chapters in Ziemssen<sup>8</sup> and Reynolds.<sup>9</sup>

Dr. Macguire seems to have failed to find the greater part of the latter works, for he says, "as a rule I found that most of the writers on diseases incidental to childhood, even those held highest in professional esteem, either partially ignored, slurred over, or devoted a quarter of a column to the disease, or boldly stated that therapeutics could not control, check, or cure it." In reply I would call attention to the fifty pages by Rilliet and Barthez, the twenty-two by Bohn in Gerhardt's Handbuch, the ten in Meigs and Pepper, and so on through the twenty odd modern authors quoted in the list appended to this paper. Therefore, I cannot agree with Dr. Macguire that the writers on diseases of children held highest in professional esteem at the present day, either partially ignore, slur over, or devote merely a quarter of a column to the disease, and I feel sure any impartial investigator will come to the same conclusion.

The second point I wish to emphasize is the differential diagnosis of ulcerative stomatitis from noma, and I will

<sup>1</sup> No. 10.

<sup>2</sup> No. 20.

<sup>3</sup> No. 21. <sup>4</sup> No. 22. <sup>5</sup> No. 23. <sup>6</sup> No. 24. <sup>7</sup> No. 25.

<sup>8</sup> No. 5. <sup>9</sup> No. 19.

begin by giving a short definition of the two diseases as generally accepted at the present time. Ulcerative stomatitis commences generally by an ulceration of the gums, or gums and cheek, accompanied by fetid breath, salivation, more or less fever, anorexia, etc.; causing more or less destruction of the soft parts, and in severe cases causing separation of the periosteum covering the alveolar processes and jaw, with consequent looseness or loss of the teeth and death of the exposed bone. When there is ulceration of the cheek or lip, there will be a more or less indurated swelling over the ulcer, with general edema of that side of the face. Here the disease may stop, recovery taking place in the majority of cases in a few days. It may, however, go on to gangrenous sloughing of the cheek or lip, ending as a rule in death in from two to fourteen days. It occurs generally in debilitated children between the ages of two and twelve. Boys and girls seem equally exposed to it. Some authors say the left, others that the right side is most frequently attacked, and all agree in its frequency in children who have had measles, and that relapses are frequent. Some authors, as Rilliet and Barthez, consider this a mild disease, easily cured by treatment; by others one is warned of the bad results that may follow when it is neglected or improperly treated. This definition will cover three of my fatal cases and three of Dr. Macguire's, and all those cases ending in recovery can surely be placed under this head.

I find noma described as follows: It begins with a bad-looking ulcer on the mucous membrane of the cheek or lip, involving the gums secondarily; like the other, it occurs generally on one side, in debilitated children between two and twelve year of age, and, like the other, is more apt to affect those convalescent from eruptive fevers, particularly measles; it is characterized by fetid breath, profuse salivation, fever, etc., like the former. Very soon edema and indurated swelling of the cheek appears, and one can make out a distinct indurated nodule in the substance of the cheek over the ulcer. This swelling rapidly takes on a glossy, reddish appearance, is cold and insensible over the hardest part, and in from two to four days the hard spot over the ulcer becomes gangrenous, and then proceeds to destroy that side of the face on which it is. Rarely does it pass over the middle line or occur on both sides at once. Death generally takes place in from four to eight days after



the gangrene has made its appearance. While this is going on in the cheek, and particularly in those cases that last over two or three days, the mucous membrane of the gums is destroyed, causing separation of the periosteum with loss of the teeth, and more or less necrosis of the jaw, just as we have in the severer cases of ulcerative stomatitis.

The points on which we at present can base a differential diagnosis are, first, the ulceration beginning on the cheek in one case, on the gums in the other; second, the greater induration of the tumor over the ulcer in noma and the rapid course to gangrene.

At present we can no longer admit the differential diagnosis given by Rilliet and Barthez, and translated verbatim by Meigs and Pepper, for they say that in the ulcerative variety there never is loss of the teeth, necrosis of the bone, or an end in gangrene, and that they always recover even if they are not treated.

I have only seen one case out of thirty-one that could be classed as noma if we accept what I have just given, and only one, No. 2, of those published by Dr. Macguire would come under that head, while all his other cases, twenty-three in number, would be classed as ulcerative stomatitis, three of which went on to gangrene. When I read over the carefully observed cases published by others, I find they all started as an ulcerative stomatitis, and, like the ten whose histories I will give, went on to gangrene. Bouchut,<sup>1</sup> in one of his late articles, makes the same statement as does Bohm,<sup>2</sup> that the beginning of noma is an ulcerative stomatitis; also that the disease may just as well begin as an ulceration of the gums, from there spreading to the cheek or vice versa; and he also remarks that when we read the etiology of noma we read point for point that of ulcerative stomatitis. I will not add further quotations in support of my view, but state that I agree with the above writers, and do not think that any case would ever be classed as noma as we have defined it, if our observations were complete and well made from the start; for I believe that every case in the beginning presents the characteristics of ulcerative stomatitis, with nothing to differentiate it from noma, and I think we should

<sup>1</sup> No. 28.

<sup>2</sup> No. 2.

simply reserve the use of the word noma for those cases that end in a perforating gangrene. We thus simplify matters and decrease the number of names for diseases. In support of these views I will now give the histories of my thirty-one cases, of which twenty-three occurred before we used bismuth, and eight afterwards.

(To be continued.)

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## ABSTRACTS.

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**1. Pfeiffer (Weimar): Retro-vaccination upon Cows and Calves, and the Technique of this Method** (*Jarbh. f. Kindhlkde.*, XIX. B., 1 H.). —In Weimar, the method of retro-vaccination of cows and calves from children has been practised for fifty years, and no one is better fitted to express a fair and scientific opinion on the subject than Med. Rath Dr. L. Pfeiffer. The experiment was begun when, in 1835, the old cow-pox lymph seemed to be growing weaker and less effective. The author's argument is as follows: First, it is now admitted by all that there is no greater protective power in cow-pox lymph, even the highly-prized lymph of the Beaugency, now cultivated onward for seventeen years, than in good humanized virus. The claim that cow-pox lymph is better because the scabs do not fall off so soon has been shown to be false. The claim that the lymph cultivated from calf to calf is cleaner and purer has also no practical weight; on the other hand, later experiments have shown that such lymph degenerates more readily than humanized lymph, and shows more variations of effect. It is one especial advantage of the retro-vaccine virus that it always takes upon the calves, that it matures regularly, and gives less variable results and less redness of the edges when used on children. This regularity, of course, is to be found in no other lymph except that taken direct from children. Even Voigt, the great authority on cow-pox lymph, admits this. The results in primary vaccinations in Weimar are about 99.6% of successes. Though the number of cases is very large, no unpleasant results have been recorded. Greater protective power, therefore, not belonging to the animal lymph, what are its advantages over human lymph? First, the avoidance of the trouble of saving the crusts; second, the impossibility of inoculating syphilis; third, the possibility of procuring an illimitable quantity of virus in a few days, as will be shown. It is still doubtful whether scrofula and tuberculosis may be inoculated, but in either case the danger of this is as great from one form of vaccine as another. In vaccine from the calf, either cow-pox or retro-vaccine virus, the danger of syphilis is absolutely excluded. The danger of erysipelas depends, not on the variety of the virus, but on the care and cleanliness with which it is collected. In the discussion of the technique, the author remarks that great advances have been made. Up to 1873, failures were fre-

quent. Improvement since then has come especially from the observance of three facts: First, the use of glycerin as a protection for the "points;" second, the collection of the lymph on the fourth to fifth, instead of sixth to seventh day; and third, the use of the base of the pock.

In regard to cost, the advantages are very greatly with the retro-vaccine method. The lymph preserved in glycerin holds so well that it is not necessary to keep up a perpetual stall. The calves are only vaccinated during the vaccination season, or when there is urgent demand. Further, this retro-vaccination almost never fails. When capillary tubes from two or three different sources are used, the successes amount to one hundred per cent. This has led the authorities at Weimar to vaccinate over larger surfaces of the calves, so that instead of using one or two cm., they now vaccinate over almost the whole of the belly which is free from hair. By the old method, they got about sixty-five lymph portions from each calf; by the new, they get about six hundred, equal to about fifteen hundred to two thousand English ivory points. All observers testify that with this increase of quantity, there has been no decrease of quality. The vaccination is carried out either by tattooing with a needle dipped in the lymph from the capillary tube, or by scraping with a sharp lancet a small portion, then rubbing in the lymph, then another small portion, and so on till the softest parts of the belly are covered. About twelve capillary tubes of human glycerin lymph are used. The course of development is very regular. On the fifth day, the surface is ready for the lymph to be collected.

In reply to the objection, that in such surface vaccination the pustules would crowd upon and destroy one another, the author quotes an article by Pohl-Pincus. This very acute observer has found that forty hours after vaccination by a single puncture, the whole altered portion of the skin has the dimension of two mm. The central puncture is surrounded by three zones: most outward, the zone of active irritation; next, a sort of protective zone, and most internal the specific vaccine zone, in which the cells of the rete are disturbed and the micrococci are developing. At the end of the fifth day, the whole spot measures about six mm., and the central specific zone 1.5 to 2 mm. If a vesicle is punctured on the fifth day, it is found that only accidental micrococci come out with the clear lymph. The mass of them lies at the ground of the vesicle, heaped under and in the layers of the stratum corneum.

From this we see that the outer zones are not important, and the danger of crowding the vesicles is not great. Theory, therefore, supports practice. The article of Pincus also shows the necessity of using the base of the pocks, a point which practical experience had also already discovered, and at the same time demonstrates that the best time for collecting the lymph is on the fifth day.

At this time, the whole vaccinated surface is covered with a yellow crust which is easily washed off with warm salicylated water. If now the vesicles are all opened, an exuding of lymph begins which, if left to itself, will continue some hours. By scraping the surface with a dull knife, and washing with glycerin or water, the process may be completed in an hour, the corium then appearing red and dry. The yellowish, cloudy, thin "pap" obtained is now thoroughly rubbed in an agate mortar. If points are to be armed, they are dipped in this, and then dried. When water has been used in obtaining the material, it may be dried



and a powder obtained which will keep a long time. When glycerin (glyc., 50; water, 50; salicyl. acid, 0.5) has been used, a paste may be obtained which will keep in small bottles, and is very convenient. The sucking up of the lymph direct in capillary tubes is a poor method. A sort of glycerin extract is made by rubbing the "pap" in a watch-glass with glycerin and, after settling, using the clear upper portion. Care and skill are necessary in all these methods.

In hot weather, no vaccination should be done.

Points armed with glycerin-lymph give almost absolute success up to the fifth day.

*Capillary tubes with glycerin extract* may be preserved for a long time.

*Glycerin vaccine paste* is secure for two weeks, and probably longer.

*Vaccine powder* is inconvenient, but perhaps destined to be our most important reliance, as there is no reason why it should not keep almost indefinitely.

The lymph obtained by retro-vaccination therefore possesses the good qualities of human lymph—durability and regular, successful course—and the advantages of cow-pox lymph—protection from the transmission of syphilis and illimitable supply.

This article was read by the author at the Meeting of Naturalists and Physicians at Eisenach, in the Section for Pediatrics. It met with applause, and at its conclusion DR. SCHMIDT (Würzburg) reported that he had used the same methods of retro-vaccination, that he had made the vaccinated surfaces of even greater extent, and that his results in both primary and secondary vaccinations had been almost universally successful. His methods of preparing and preserving the lymph were very ingenious.

DR. PIZA (Hamburg) recognized the importance of retro-vaccination for the success of public vaccine stations. The easy perservability of human virus made it possible to procure a full supply of animal lymph at any station in a few days. In continued cultivation of retro-vaccine lymph on the calf, Dr. P. found that it rapidly degenerated. After only two generations, the pustules, most of them, aborted. Such degeneration of original cow-pox lymph only shows after several years. In the vaccine institute at Hamburg, the virus was cultivated from calf to calf from 1875 up to a year ago with great success. The pustules then began to vary, and the lymph became poor. Variolation of the calves was then tried, and the public stations in Hamburg are now supplied either with animal variola-vaccine or with humanized lymph. The activity of this lymph was at first very great, but now, after cultivation through one hundred and fifty calves, it has lost to a great extent its power. Comparing, therefore, these three varieties of lymph, P. greets the method used at Weimar as a sure help for the vaccine stations.

J. F., JR.

**2. Pissin: The Preservation of Animal Vaccine** (*Berl. Klin. Wochenschr.*).—DR. PISSIN reports a new method of preserving animal vaccine. It consists in spreading upon a watch-glass the entire contents of the pustules, not excluding the epidermis cells, and there mixing it thoroughly with diluted glycerin. This extract may either be kept in capillary tubes or in air-tight larger tubes or glasses. By this method, much larger quantities of lymph are obtained, and Dr. P. claims that it

preserves all its activity certainly for at least three weeks. Out of ninety vaccinations with this lymph, he had only two failures, and out of thirty-one re-vaccination no failures.

J. F., JR.

**3. Kassowitz: The Relation Between Rubeola and Morbilli** (*Wien. Med. Blatt*, 4-6, 1882).—In 1874, Dr. Kassowitz expressed his opinion as against the existence of a specific rubeola, claiming that sufficient proof of it had not been brought forward. He now takes pleasure in reporting from his own observation a very extensive epidemic of Rötheln, during which in no single case a transmission from Rötheln to genuine measles could be demonstrated. The symptoms and course corresponded with the descriptions of Emminghaus, one-third of the cases showing distinct enlargement of the cervical lymph glands. The contagiousness was undoubted the incubation was between fourteen and twenty days. According to K.'s observations, rubeola is entirely distinct from morbilli, yet the resemblance is so apparent that he must confess that Rötheln stands closer to measles than any other disease known to us, and perhaps, he suggests, this resemblance depends upon some micro-organism as yet unknown. He supposes between measles and Rötheln, as between variola and varicella, some connection, but leaves the question undecided. The analogy between variola and varicella on the one hand, and morbilli and rubeola on the other hand, might perhaps consist in this, that *very exceptionally* from the infection of varicella, variola might arise, from the infection of rubeola morbilli might arise. In a debate on this question in the London Medical Congress, Cheadle reported an epidemic of mild cases of rubeola closely followed by severe cases, which might have given rise to a suspicion of transmission of rubeola into morbilli. K. recalls, with a side-glance at the micrococci, that micro-organisms are made either benignant or malignant at the will of the experimenter. Variola and vaccinia, which, although their eruptions are so similar, are yet clinically so widely separated that they are always considered two different diseases, are, in fact, probably identical. Vaccine is variola virus changed by transplantation to another species of animal. He remarks that even the transmission of variola by variolation makes the disease more similar to vaccinia, in that it runs a milder course, and the pustules occur only at the point of inoculation; on the other hand, vaccinia in children who suffer from an extensive moist eczema, often on the tenth or eleventh day causes an extensive pustular development upon the eczematous surfaces, perhaps because the increased fluxion to the diseased portions of the skin carries a greater quantity of micro-organisms. "Let us, then, not be in too great haste to divide once, and for all, from our present stand-point of scientific observation the cord between rubeola and morbilli, and between variola and varicella."

J. F., JR.

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ORIGINAL COMMUNICATIONS.

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ON MASTURBATION AS AN ETIOLOGICAL FACTOR IN THE  
PRODUCTION OF GYNIC DISEASES.

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BY

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BEFORE entering upon such a subject as the above, two questions present themselves, in view of the attitude taken by many members of our profession in regard to the matter. First, does masturbation exist among women to an extent sufficient to give its consideration any practical value; and, second, will any good come from engaging in such a distasteful and disgusting inquiry? In regard to the first question, I know from opinions I have frequently heard expressed that it is generally answered in the negative. Masturbation is admittedly a secret vice, and in women much more so than in men. No one denies the extent to which it exists among boys and youths; yet the cases are few which present themselves professionally to the physician, except those occurring among the insane, regarding which the doubt as to whether the masturbation is or is not merely a result of the insanity is sufficient to place them outside the question. Granting this, then, are we to deny the prevalence of the habit among females merely because it is not thrust under our observation, knowing, as we do, the difference in the character of the sexes, and recognizing, as we



must, the disadvantages that a woman is placed at in comparison to a man when confronted with a male doctor? Then, again, when a case in the male is brought under our notice, the diagnosis is usually simple, being aided by the observations of the friends or the easily-obtained confession of the patient, and it is on account of the habit itself rather than of any results produced by it on the genital apparatus that we are consulted. In the female the very reverse holds true, and if we are to wait until the existence of masturbation among them is demonstrated as it is in the male, we should have to close our hands and say with the doubters I have referred to, "The thing is such a rarity that its consideration can be of no practical value." It is with the object of supplying a different answer that I now write, and I will leave the answer to the second question, as to the propriety of approaching such a distasteful subject, to those who will take the trouble carefully to peruse the cases given below, and I trust that, by considering the matter in a purely scientific manner and by pointing out the etiological importance of the habit in the production of many organic disturbances in the female genital apparatus, it may be rendered less disgusting in view of the importance of its recognition from a therapeutical point of view.

The following remarks by Goodell,<sup>1</sup> made to his clinical class on approaching the consideration of a somewhat kindred subject, are so apposite that their quotation may be pardoned:

"For the correct interpretation of diseases we must intrepidly search out their causes, whether moral or physical, however loathsome or impure they may be. . . . It is, however, so hard a task to discuss such subjects in acceptable language, that I confess to some squeamishness, and would much rather refer you to suitable text-books, were there any. But, unfortunately, there are none on these subjects, although our land is flooded with a prurient literature treating of the conjugal relations. Impudent quacks and men of battered reputations must not be your guides, for better it is for you to learn a new thrust of fence from a friendly foil than from the stab of a foe."

A confirmation of the existence of the habit among women may be obtained by glancing at such historical allusions to it as are to be found. What, then, can be more distinct than the words of the prophet Ezekiel (xvi. 17), when exposing and denouncing the wickedness of Jerusalem? Or what more con-

<sup>1</sup> Clinical Lessons in Gynecology.

vincing than the numerous bronze and gold specimens of "phallus," or imitations of the penis, which have been found in Pompeii and Herculaneum, and which are now to be seen in the Naples museum? Similar imitations, but made of India-rubber, are to be seen almost openly exposed for sale at the present time in more than one of the European capitals, and their existence is so freely recognized in China that they are brought on the stage in the theatres, to the merriment of the spectators. And yet, as we shall show, masturbation by the use of such devices is by no means the commonest variety of the vice. The history of Sappho and of the Lesbian women, and the pretty direct references made by Juvenal in his Satires, and by other classical writers, show us that the habit was well known both among the Greeks and Romans, and that the form known as "tribadism," or mutual masturbation, had then an existence. Mention, too, is made of the disease—for so it has been called—by many writers of the early and middle ages, both monkish and medical, while during the present century much has been written directly upon the subject by authors whose works will be found in the appended list of its literature.

At the outset, it is necessary to correct an erroneous and widespread belief that masturbation consists in the imitation of the sexual act by the introduction of some substitute for the penis into the vagina. While not denying that this is occasionally the case, still, a reference to the frequent presence of the hymen in the accompanying cases is sufficient to assure us that it is by no means always so, and though the vagina is in some of those cases described as large and dilated, this dilatation is not to be explained as due to any such mechanical means, as will be more fully shown further on.

In what, then, does the habit consist? From the study of the appended cases, I would say that as a rule it consists in stimulation of the sensitive external parts, which may be accomplished by crossing the legs and chafing them together, or by means of the hand or any substitute for it over the vulva, the vagina proper remaining untouched. Hence we can understand the frequency—in our cases the uniformity—with which distinct and evident changes in the anatomy of the external parts are found among women presumed or known to be masturbators. These changes will, of course, vary in degree, depending upon the duration of the habit and the frequency of repetition and

manner of performance of the act. In regard to this latter, I believe that it would be quite possible to divide masturbators into classes according to the various appearances produced by the different means adopted, as has indeed been done to some extent by Martineau, in Paris, whose opportunities for observation have been extensive, but, for reasons easily understood, I have made no attempt to do so from my own cases.

Among those evident or external changes are the following:

- a.* An increased appearance of size of the external organs of generation, due partly to their being more separated and spread out, and partly to a real increase in the size of the clitoris, with its prepuce and of the labia minora. The clitoris, too, is frequently found situated higher up or further away from the vaginal outlet than usual, and this has been attributed to a mechanical cause. There is thus, in addition to an increased size of the external organs of generation, an alteration in their relative proportions and positions.
- b.* An alteration in color, not, however, of a uniform nature, but dependent upon the amount of recent irritation to which the parts have been subjected. There is usually a bluish, mottled appearance, especially of the surfaces of the labia minora, which are, at the same time, dry, rough, and irregular on the surface, probably as a result of their exposure to the surrounding air. There may, however, be extreme redness and other evidence of mechanical irritation, such as cracks and scratches, especially in the neighborhood of the clitoris.
- c.* An unusual degree of moisture about the entrance to the vagina, apart from the possible presence of leucorrhea. This may not be a constant phenomenon, but was present in nearly all of the cases below mentioned. Perhaps the explanation of it is, that it is brought on by the sexual excitement induced by the thought of an impending examination.
- d.* A relaxed and patulous condition of the entrance to the vagina, but with no constant change in the hymen.

It must be understood that these changes are due to the external or vulvar form of masturbation, but as this is by far the more common form, and is usually also practised along with the internal or vaginal, it may be assumed that these changes, to a greater or lesser degree, will be found in any case where the habit is at all well developed. The increase in size of the smaller labia is, perhaps, one of the most frequent results of manuelization, and is sometimes so pronounced that these ap-



pendages measure two or three inches in length, and come to resemble the ears of a lap dog, and to present, with their size and the alteration in color and surface already described, a very decided contrast to the small rosy ridges of skin as usually seen. It has often been urged that this hypertrophy is due to other causes—never named, however—but the objection is hardly tenable, when we consider that in almost all the accompanying cases where it was observed, masturbation was admitted on careful and discreet inquiry, while on no occasion have I found this change where there have not been other and satisfactory grounds for suspecting the existence of the habit, and I may say that in nearly all the patients I refer to, I have had the advantage and satisfaction of Dr. Angus Macdonald's assistance and corroboration. In this connection, the following remarks by Hildebrandt<sup>1</sup> are noteworthy. Speaking of the apparent difficulty of arriving at a correct conclusion as to the existence of the habit of masturbation in girls, he says: "You will probably believe, gentlemen, that the causal connection between masturbation and retroflexion is not often to be traced out, on account of the rarity of an explicit confession. This is not so difficult as one would think at first sight. By carefully putting the question, there is often enough established, unmistakable acknowledgment, either directly or in a confused outpouring of apparently negative and evasive statements."

The causation of these external changes is, probably, directly mechanical, though there may also enter as a factor in their production, some of those physiological effects of the habit which, as we will afterwards see, play an important part in the production of various pathological changes in the internal parts.

To appreciate aright the extent to which the vulva of a masturbator may come to differ from that of an adult virgin who has never practised a self-abuse, it would be well to remember the following facts about the latter: When viewed with the legs only separated sufficiently far to permit of a view being obtained, but not far enough to put tension upon the parts, nothing is seen either of the clitoris (Quain) or of the labia minora. Indeed, sometimes in a plump individual the lithotomy position may be assumed and still only a small portion of the posterior end of the labia minora be uncovered. On

<sup>1</sup> Ueber Retroflexio des Uterus. Volkmann's Sammlung Klinischer Vorträge, No. 5.

separating the greater labia, the smaller ones are seen running obliquely across their inner surfaces, from the clitoris to a point about the middle of each labium majus, in which they become lost. Their length (from clitoris to their termination) will be one and a half to two inches; their breadth (from attached base to free border) not over a quarter of an inch, and their thickness just that of a folded piece of skin.<sup>1</sup> They are composed, as pointed out by Hart,<sup>2</sup> of skin, and not, as is stated by anatomists, of mucous membrane, and are studded with sebaceous glands, which keep them moist. Lying protected within the labia majora, they are, like them, always in intimate contact, and their color is a pale rosy pink.

Before considering the effects of the habit upon internal organs, it will be necessary to face the question of how it comes about that the practice of external masturbation affects the vagina, the uterus and its appendages. An *answer* will be found by a consideration of the accompanying cases, but to find an *explanation* it will be necessary briefly to consider the physiology of the sexual act in woman.

Corresponding to the stage of erection in the male, there is, in the female, what may be called a stage of preparation, characterized by turgescence of the vessels of the vagina, and probably of the whole genital apparatus, and by activity of all the mucous glands in the neighborhood, as evidenced by a degree of moisture, in some cases sufficient to stain the linen. This is frequently confounded with the stage of consummation, the more readily so as, unlike its analogue in the male, it is attended by distinct pleasurable sensations. This preparatory stage may be reached by any of the means, bodily or mental, which, in the opposite sex, cause erection. Following upon this, then, is a stage of pleasurable excitement, gradually increasing and culminating in an acme of excitement, which may be called the stage of consummation, and the analogue of which in the male is emission. This is followed in both sexes by a degree of nervous prostration, less marked, however, in the female, and,

<sup>1</sup> It will be seen that in the context and in the descriptions of the cases, the term length has been applied in relation to the labia minora to what, in the above description, has been called their breadth. The reason of this is that, when they are changed in size, they so often become *broader* than they are (anatomically) *long*, so that in clinical description the word length comes to be used for what would anatomically be called breadth.

<sup>2</sup> Edin. Med. Journ., 1882, and Trans. Edin. Obstet. Soc., Vol. VII.

what is more important in regard to the question under consideration, by a relief to the general congestion of all the genital organs, which has existed, and perhaps increased, from the beginning of the preparatory stage. Now, in male masturbators, the final stage is the one aimed at and the one attained, and it results as a consequence of the operation of well-known physiological laws. In the female, this is not the case. In them the excitement attending consummation is not associated with anything really corresponding to emission, and is more the result of mental than of corporeal influences. Hence, in masturbators it is but rarely reached, while the stage of pleasurable excitement, with its accompanying congestion, is indefinitely prolonged and frequently renewed—renewed before the congestion, unrelieved by the act of consummation, has time to gradually subside. In this we have the key to the effects of masturbation upon the pelvic organs in women.

It will not be out of place here to allude to various other practices which would appear to operate with a like prejudicial effect upon the female generative economy.

Among these are included imperfect coitus, either voluntarily or involuntarily so. The terms onanism and masturbation are used synonymously, though the fault of Onan really consisted in his having recourse to emission "*extra partes mulieris*," and in this he has still many imitators. Quite recently I had occasion to know of a young couple who had arranged, that by this means they would enjoy a year's honeymoon without the possibility of its interruption by the occurrence of pregnancy. Before half that time had elapsed, the woman's health had given way, and this, along with a profuse leucorrhea and an intense sensitiveness of the external parts, compelled her to seek medical advice. Acting upon this, she and her husband broke through their arrangement, with the most marked benefit to the health of both. There are other forms of voluntarily imperfect coitus to which it is unnecessary to allude more particularly, the evil effects of which, not only on the general health and moral nature of women who are subjected to them, but also on the integrity and soundness of their generative organs, must frequently come under the notice of those engaged in gynecology. The consequences resulting from the employment of another class of "checks"—those directed to the destruction of the vitality of the spermatozoids—do not claim consideration along



with the foregoing, as they cause mischief in a different manner, a totally new etiological factor, acting more mechanically, being here introduced into the question.

In regard to those cases where coitus is imperfect but is involuntarily so, their mere mention will suffice to make them understood and their character appreciated. They are dependent either upon premature emission on the part of the husband, the result either of former habits of masturbation on his part, or other causes, or from relative sexual frigidity on the part of the wife, the result of various causes, physical, mental, and moral—principally mental and moral.

Now, in those cases of conjugal onanism and of relative sexual frigidity on the part of the wife, what is known as the "orgasm," or act of consummation, is not reached, and in that respect the individuals in question come to resemble masturbators, of whom, as we have already seen, the same holds true. In both, the normal sedative to sexual excitement and to its attendant local congestion is absent, and from two such similar causes it is not too much to expect like results. And this is indeed the case, the differences being of degree only, not of kind. That there will be difference of degree can be easily understood, when the frequency with which the act of masturbation may be performed, and the length to which each act may be prolonged, are taken into consideration.

In the following cases, only the question of masturbation is considered, it being thought better to exclude instances where local disease was presumably traceable to conjugal malpractices, as in them so many other elements entered as to materially diminish their clinical value. The cases of several widows and of some married women have, for a like reason, been omitted. With one exception (case 20), all the following individuals were unmarried, and none of them had ever borne a child. Great care was on all occasions taken to eliminate other causes, before pronouncing on the connection between the masturbation and the lesions or complaints. Among those other causes, it may be mentioned that any facts pointing to the occurrence, at any previous time, of an abortion were carefully looked for; also whether the illness dated from the occurrence of any acute disease—fevers, etc.—or from any injury or strain. In none of them were there grounds to suspect the presence of syphilitic poison, or the previous occurrence of gonorrhea. In most

of the patients an admission was obtained of the existence of masturbation; in others sufficient was admitted decidedly to warrant its assumption. To expect an affirmative answer to a direct question from such patients would be vain, and the certain result of putting such a question would inevitably be to put the patient on her guard and render the inquiry more difficult, if not fruitless. It is better to ask if there be, either at the time of examination or on other occasions, any irritation or itchiness about the vulva—whether any such familiar applications as cold cream or vaseline have been tried to relieve this, or whether recourse has been had to scratching or rubbing. Should any of these be admitted in a case where there are other and good grounds for suspecting the existence of the habit, it is advisable firmly but kindly to accuse the patient—not necessarily at first, or, indeed, at all—taking notice of the sexual nature of her sensations. This will very frequently elicit the statement that she did not know she was doing herself any harm, and it is only due to womankind to say that, in very many instances, this is undoubtedly true. However they may have learned it—from a nurse or perhaps through accident—many such cases practise the habit, not only without having any idea of its danger, but also—for a time, at least—without knowing its sexual nature. That this can be true for any length of time is very doubtful, but, judging from the analogy of the other sex, in whom the opportunities for learning about sexual matters are much greater, we must admit that the habit may be continued for long without its victim being aware of its viciousness or wrongness, a woman's apparent secrecy in regard to it being only due to a natural reluctance to speak about her sexual parts at all.

While examining a female suspected of masturbation there are, in addition to the local changes already described, one or two points which may help to confirm the suspicion. As a broad rule, it may be stated that a woman of a healthy moral tone will submit quietly to a local examination when its necessity has been explained to her. Patients of the kind under consideration, however, along, of course, with some others who cannot be described as of a healthy moral tone and also some extremely nervous women, will make a great fuss over an examination, and will render it as difficult as possible, at any rate they will not lend any help to the examiner. Again, an abnor-

mal sensitiveness will be met with on touching the external parts, and possibly a greater degree of moisture than usual, or than is explicable from any leucorrhea which may be present. The clitoris will usually be found erect, and on touching it, the patient will almost invariably show her want of self-control. On passing the fingers into the vagina—in cases where such a proceeding is prudent or necessary—there will often be felt a spasmodic contraction of the lower inch and a half or so of the canal, due to the action of the levator ani muscle, which swings and draws up both rectum and back wall of the vagina. This, however, is by no means of constant occurrence, and is not of long duration. The cervix is frequently abnormally soft, and the os may be slightly gaping. Though, of course, both of these conditions may result from other causes, still, sexual excitement must not be lost sight of as occasioning them. I have distinctly experienced, while examining a very sensitive woman, a normally hard cervix with a small os become a soft and velvety one with an open os, the patient at the same time giving undoubted evidence of sexual excitement.

Into the question of the general symptoms of, or constitutional disturbances following masturbation, I will not here enter. The subject is too indefinite, too wide, and too diffuse, and it lies entirely outside the limits set by the title of this paper. To one symptom, the appreciation of which may often prove of service, attention may be drawn. It is only noted in Case 1, but was present in several others, and Atthill draws attention to it in his "Clinical Lectures on Diseases Peculiar to Women;" that is, the occurrence of vomiting at odd intervals—frequently at night, and without any good or satisfactory cause for it being discoverable.

(To be concluded.)

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## ON THE ETIOLOGY AND TREATMENT OF ECLAMPSIA.

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ECLAMPSIA is characterized by epileptiform convulsions during pregnancy, labor, or childbed, and is brought about by an affection of the kidneys. An eclamptic attack is distinguished from an epileptic seizure by the history, and the condition of the pulse, and of the secretion of the kidneys, both of which are more or less unaffected during an epileptic fit. The eclamptic convulsions with their concomitant symptoms are identical with uremic convulsions in every respect. Since it is known that albumen is almost invariably found in cases of eclampsia, it has been taken for granted by many that eclampsia occurs only in pregnant women who are suffering from one or the other form of Bright's disease. Therefore, the same explanation has been given for eclampsia as for uremia, and many authors have considered eclampsia as acute uremia, on account of the sudden onset of all the outspoken symptoms of the latter disease. The best-known explanations for uremia are Frerichs', that uremia is caused by the decomposition of retained urea into carbonate of ammonia, and Traube's, that uremia is produced in hydremic persons by a sudden increase of the pressure in the aortic system, whereby acute edema of the brain is produced. A great amount of labor has been bestowed upon the elucidation of this subject; nevertheless, the results arrived at are far from being satisfactory. Rommelære and Voit, who had repeated and revised the experiments performed by others, although they did not succeed in finally settling the question, obtained, however, some valuable results. They exposed the fallacies of Frerichs' and Traube's theories, and came to the conclusion that no particular substance could be accused of producing uremia, but that the retention of all the substances which should be eliminated by the kidneys is sure to produce it. Bartels, by clinical experience, arrived at

the same results. Many obstetricians, though admitting the dependence of eclampsia upon some affection of the kidneys, cavil at the identity of eclampsia with uremia, for the following reasons. 1. That eclampsia does not always occur in pregnant or parturient women who are suffering from Bright's disease, so that in one hundred cases it occurs only in about sixty per cent. 2. That in many cases of eclampsia no disease of the kidneys can be demonstrated. Ingerslev had collected one hundred and twenty cases in which no change in the kidneys could be found. 3. That there are cases of eclampsia with so little albumen that it can be considered as the consequence of the convulsions. On the other hand, the relation between the attacks of eclampsia and the altered secretion of the kidneys is so obvious that it cannot be passed over. The discharge of urine is scanty and more or less albuminous before and during the paroxysms. The decrease of albumen and the increase of urine after the attack are the most favorable symptoms in cases of eclampsia. Some authors supposed a venous stasis of the kidneys brought about by pressure of the uterus, but it escaped their attention that the uterus, from its position, cannot cause such a pressure, and that no stasis had been found in the kidneys, which are on the contrary pale and anemic. English and French obstetricians tried to compromise this dilemma by adducing other causes which, along with some affection of the kidneys, should produce eclampsia. The deteriorated blood, the sensitiveness of the nerves of the pregnant woman, and similar causes, one as untenable as the other, had alternately been accused. All these explanations have the same fault, that too much attention is paid to casual conditions, which may exist in eclampsia, but very often do not; furthermore, these theories are totally unfit for the explanation of uremia, as most of the conditions present in pregnant women do not exist in cases of uremia. None of these theories give an explanation for the insufficiency of the secretion of the kidneys, which is admitted by all to be of great importance. C. Braun goes to the other extreme and lays too much stress on the results of post-mortem examinations. He found that, in twenty cases, death was due to peritonitis in five, and in fifteen to morbus Brightii alone, and he jumps to the conclusion that in eclampsia we find most constantly one or the other of the three forms of

morbus Brightii, as described by Frerichs, *i. e.*, hyperemia, fatty degeneration, or atrophy of the kidneys. This is true in the cases where death is caused by morbus Brightii, but is not true in the far larger number of cases which recover or die accidentally from other causes. We do not find any of the forms mentioned before in all the cases, in which pregnancy alone is the cause of the change in the kidneys, and in which, neither before nor after pregnancy, can symptoms of the renal affection be found. We find, as Leyden has first pointed out, and Bartels and others have confirmed, an alteration of the kidneys which is peculiar to the kidneys of pregnancy, and which differs from all other forms of morbus Brightii, acute or chronic. The kidneys are large, more or less edematous, the pelves dilated, the surface smooth, of a pale-yellow or brownish-yellow color, the cut surface of the parenchyma pale, opaque, the cortical substance yellow, with more or less fatty degeneration. The epithelium of the convoluted tubules of Bowman's capsule undergoing fatty degeneration, the epithelium of the tubuli recti little changed, with no signs of inflammation, the change in the kidneys showing in its beginning and course a great difference from both acute and chronic nephritis.

An explanation for eclampsia which should be satisfactory must hold good for patients of different constitutions, and at the same time take account of the change in the kidneys, otherwise we have to give a different explanation for every case. There are only two causes known, both of which invariably produce epileptiform convulsions—they are, ligature of the cerebral arteries, and the retention of urine and its ingredients in the system, either by deficiency of the secretion on account of nephritis, or by mechanical retention. As the changes of the kidneys in pregnant women are altogether different from those in nephritis, we have to accept a mechanical disturbance of the secretion of the urine.

It is surprising that the mechanical hindrance in the ureters during pregnancy has only lately found attention, although it was known to Morgagni (*De Sedibus et Causis Morb.*, 1767), *cum enim uterus crescens ureteres premendo minus per hos facilem reddat urinæ defluxum, et quod sequitur non nihil in renibus eam moretur*. Likewise it is known that flexions of the uterus, parametriccic atrices or exudations, and carcinoma



uteri can interfere with the discharge of urine through the ureters, and produce hydronephrosis and uremia. A good description of the consequences of ligation of the ureters is given by Cohnheim (*Allg. Patholog.*, II. B., 1882, p. 462). He says furthermore: "It is true that in these experiments not all the pathological conditions are encountered which come under observation in patients suffering from kidney disease, but the most striking, as disturbance of the digestion, and the grave nervous symptoms, agree too surprisingly for a doubt to be left of their dependence upon the retention of urine." No use had been made of these facts, until Halbertsma (*Centralblatt für Med. Wissenschaft*, No. 21, 1871) broached a new theory which he recently advocates again (Volkmann's *Sammlung Klin. Vort.*, No. 212, 1882). Clinical experience and various other considerations led him to reject all other theories as unsatisfactory. His theory implies that the discharge of urine through the ureters is hindered either by pressure of the pregnant uterus or by catarrh of the ureters. Halbertsma supports this theory by adducing the topographical conditions of the ureters, the changes found in the kidneys, several post-mortem observations, and the results of his experiments, whereby he found that, if the ureters are pressed, in the length of 8 cm., by a weight of 5 grams, the pressure of a column of urine of 400 mm. is not sufficient to overcome the resistance. The objections which have been raised against this theory can easily be disposed of. Schroeder objected to it because thereby the inflammatory character of the kidneys could not be explained. Leyden and others who have paid attention to the pathological changes in the kidneys agree that the condition of the kidneys during pregnancy shows no signs of inflammation, and Leyden says further: "Or is the stagnation of the urine in the ureters the cause of it?" Another objection (Kleinwächter, *Zeitschr. für Geburtsh. u. Gyn.*, I. B., III. H.) is that ovarian tumors, if this theory were correct, would cause eclampsia more frequently. But in cases of ovarian tumors the ureters are more favorably situated, as they remain in their position, while in cases of pregnancy they are stretched and have to follow the uterus in its extension. Even if the ovarian tumor should exercise a pressure upon one ureter, it is not on both, and one will relieve the other. The favorable effect of narcotica in

cases of eclampsia has been ascribed to their effect of neutralizing the spasm in the spasm centre, but narcotica can only lessen the symptoms of eclampsia, as antipyretica abate the fever in septicemia without removing the cause. The danger after the first attack of eclampsia can be as great as after the tenth or twentieth, if a free secretion of urine does not take place.

The theory of mechanical obstruction of the excretion of urine appears more satisfactory than any other. There are, however, some objections to Halbertsma's conception of it. He lays too much stress on the pressure of the ureters by the pregnant uterus. This cannot well account for the very frequent cases in which eclampsia occurs after the labor, and for the not rare cases in which eclamptic attacks set in and cease during the pregnancy without having induced labor. In these latter cases, eclamptic attacks occur weeks and even months before labor, with a great quantity of albumen in the urine. The albumen disappears gradually after the attacks in a few days, and pregnancy continues to the full term, when a living child is born. In the first cases eclampsia occurs after the pressure on the ureters had abated, and in the latter all the disturbances disappear, although the pressure on the ureters is increasing. Instead of pressure, I would rather accept the stretching, inflection, or infraction of the ureters, which the increasing or contracting uterus can produce. This would better meet all cases. It would account for the great frequency in primiparæ, on account of the greater tenseness of the connective tissue; would also account for the influence of the contractions of the uterus, and for the frequent cases in which eclampsia appears after labor, when a displacement of the ureters is very likely to take place. The *vis a tergo* of the urine is also, according to this conception, more likely to overcome the hindrance than if pressure were the cause of the resistance. In several cases of eclampsia, changes in the course of the ureters have already been found, and if more attention were paid to this subject we would more often find either inflection, infraction, stretching, catarrh, pressure, or some change whereby the passage of urine through the ureters is impeded, and the changes in the kidneys peculiar to pregnancy brought about. Furthermore, it is known that the secretion of urine from the kidneys stops when

the discharge encounters a resistance of five to six mm. In cases of abnormally distended bladder, we will not look for the nervous influence, as the mechanical influence is sufficient to explain the onset of eclampsia. In pregnancy the secretion of the kidneys is increased, and so the beginning of their insufficiency may escape attention, as cases of chronic nephritis will also do well for a while, notwithstanding the insufficiency of the kidneys, until the accumulation of non-eliminated ingredients of the urine is so great that it produces uremic attacks. The hypertrophy of the heart, which is always present in pregnant women, may also contribute to the onset of eclampsia, as, according to Cohnheim, l. c., p. 470, "the secretion of urine and its ingredients takes place regularly (in case of chronic nephritis) as long as the abnormally strong action of the hypertrophied heart lasts; as soon as the latter refuses, oliguria and retention of the ingredients of urine supervenes."

My experience comprises fifty-two cases, which I observed in the clinic of Vienna or here. The patients were of different general conditions, though most of them strong and healthy; some of them, however, were rather anemic and ill-nourished, but in no one were signs of morbid sensitiveness or other conditions observable, which are supposed to contribute or predispose to the occurrence of eclampsia. One patient had been previously treated for, and finally cured of, epilepsy. While several parturients came under my observation who suffered from epilepsy before and during the pregnancy, in none of them eclampsia occurred. In all cases the urine was scanty and albuminous during the attacks, with only one exception; the urine increased and the albumen disappeared in all cases—except the few in which chronic nephritis was present—a short time after the attacks had ceased. None of the other theories could be applied to a larger number of my cases. The mechanical theory is applicable to all cases which are not caused by morbus Brightii. As morbus Brightii of itself is sufficient to cause uremia, we need no other cause in *these cases*; the mechanical theory, however, is available also in *these instances*. Pregnant women suffering from morbus Brightii are more exposed to eclampsia, because the insufficiency of the diseased kidneys can be aggravated by alterations in the ureters. I therefore consider eclampsia due to the same causes as uremia, that is, retention



of the urine and its ingredients, and it can be produced—1st, in the large majority of cases by a mechanical obstruction of the ureters, whether the tissue of the kidneys is healthy or is secondarily changed by the mechanical obstruction. The mechanical obstruction is brought about most frequently by flexion, infraction, or stretching of the ureters. These are the more favorable cases, because the *vis a tergo* of the urine is more likely to overcome the resistance; less favorable, but also less frequent, are the cases in which the obstruction is caused by pressure or catarrh of the ureters. An abnormally distended bladder or a resistance in the urethra will have the same effect as an obstruction in the ureters. 2d. By morbus Brightii in a slight degree in combination with mechanical obstruction in the ureters. 3d. By morbus Brightii alone, when the structure of the kidneys is so degenerated that insufficiency of their secretion ensues. These are the most unfavorable cases. During the course of eclampsia we will often not be able to decide which of the aforesaid causes is present, as the change in the urine is the same, and the hypertrophy of the heart, which is never missed in cases of chronic nephritis, is also always found during the pregnancy. The results of ophthalmic examinations are available, as retinitis albuminurica is only found in cases of nephritis.

The following cases are not selected according to any principle; they are taken up in order, as I observed them in Vienna or here in about 12,000 cases of labor. This number cannot be valuable for the frequency of eclampsia, as patients are often brought to the clinic only on account of eclampsia, but it has some value, as it shows the results which are obtained by abstaining from too active interference. About the condition of the ureters in the post-mortem cases, I can say nothing, because no attention was paid to them.

1. Primip., twenty-five years of age, had the first attack when the orifice was completely dilated and the head at the outlet; in fifteen minutes, the second; forceps were applied and a living mature child extracted, then during one hour three attacks occurred; the albumen in the urine disappeared in two days.

2. Primip., seventeen years of age, conjug. vera, 9 cm., the first attack occurred when the orifice admitted three fingers and the head was in the cavity; during seven hours six attacks occurred until the orifice was completely dilated; with the forceps a living

mature child was extracted; one attack after the labor; considerable albumen, which disappeared in three days.

3. Primip., nineteen years of age, living child of eight months was born naturally; two and a half hours after labor the first attack occurred and then in ten hours five attacks; albumen and casts disappeared in two days.

4. Primip., twenty years of age, was in unconscious condition on admission, the orifice admitting two fingers, the head at the inlet, pains very feeble; rupture of the membranes to excite pains; a great deal of albumen in the urine; fourteen attacks in five hours until the orifice was completely dilated; with forceps a living mature child extracted; one attack during the operation and two soon afterwards, the unconsciousness continued, temperature 104, pulse 148. next day edema pulmonum set in and patient died. Post mortem: croupous pneumonia in both lungs in the stage of red gray hepatization, hyperemia of the brain and its meninges. Morb. Brig. end of the second stage with beginning contraction. Uterus well contracted.

5. Primip., twenty years of age, first attack when the orifice was nearly completely dilated; the second half an hour afterwards; after fifteen minutes a living mature child was naturally born; half an hour after, the third attack. Albumen disappeared the next day; after an intermission of fifty-three hours the fourth attack, albumen in urine; after a pause of seventeen hours, eight attacks in nine hours; albumen disappeared the next day.

6. Primip., seventeen years of age, spontaneous labor, child living, eight months; first attack fifteen min. after labor, second and third in half an hour; albumen disappeared the next day.

7. Primip., twenty-two years of age, twins living, mature, spontaneous labor; after delivery patient complained of headache, nausea and vomited; nine hours after, the first attack occurred, and in twenty hours thirteen attacks; after the first attack no albumen in the urine, then albumen during two days; patient was unconscious two days; two days after, speech returned.

8. Ipara, twenty-five years of age, spontaneous labor, child living, mature; half an hour after labor the first attack, and fifteen minutes after this the second; albumen disappeared the next day.

9. Ipara, nineteen years of age, child living, ninth month, born in breech presentation; six hours after labor the first attack, then thirteen attacks in twenty-four hours; albumen disappeared the third day. The same day mania puerperalis occurred which was cured in a short time.

10. Ipara, twenty-seven years of age; the first attack when the orifice was completely dilated and the head at the outlet; forceps applied, during the operation the second attack; child living, mature; then ten attacks in eight hours, large amount of albumen which disappeared the next day; slight endometritis developed in fourteen days, cured.

11. Ipara, nineteen years of age, the first attack when the orifice admitted one finger, no albumen in the urine; then four

attacks in ten hours, the attacks were slight; consciousness returned after each attack; seven hours after the last attack the forceps were applied, the head being in the cavity; during the extraction meconium escaped, the child was asphyxiated and died. After the attacks some albumen appeared which increased during the first day, but disappeared the next.

12. Ipara, twenty-four years of age; the first attack seven hours after spontaneous labor; child living, nine months, then in eight hours four attacks; albumen in the urine disappeared the next day.

13. Ipara, twenty-four years of age, had four attacks before she came under observation, and then during the first stage five other attacks occurred in the course of eight hours; forceps were applied and an asphyxiated child of eight months was extracted. There was so much albumen in the urine that it was completely coagulated on boiling; the next day albumen disappeared.

14. Ipara, twenty-three years of age, two attacks during the first stage when the os was almost completely dilated; after complete dilatation forceps applied, child living, eight months; after labor twelve attacks in nine hours; next day she becomes conscious, gives short answers, temp. 100, pulse 112, considerable albumen and casts in the urine, continues to be drowsy; died next day. Post mort.: pneumonia crouposa in the stage of red and partly gray hepatization; chronic morb. Bright. in the right kidney which is enlarged to double the normal size by compensatory hypertrophy; rudimentary development of the left kidney. Edema cerebri. Ecchymosis under the ligament. capsulæ hepat. and pericardium.

15. Ipara, twenty-six years of age, twins; first attack, forceps with first child, turning and extraction with second, both living, eight months; after the labor, four attacks in one hour, then intermission of nine hours, then again seven attacks in twelve hours; considerable albumen disappeared in a few days.

16. Ipara, thirty-two years of age, eight days after a normal labor, four attacks in one hour, little albumen.

17. Ipara, twenty-two years of age, first attack when the orifice was completely dilated, forceps, child living, mature; two attacks during the third stage, little albumen, perimetritis cured in fourteen days.

18. Ipara, twenty years of age, during the labor tonic and clonic convulsions in the inferior extremities, intellect clouded, severe headache, albumen in the urine; spontaneous labor, child living, eight months; after labor, restlessness, which disappeared with the albumen in two days.

19. Ipara, twenty-three years of age, normal labor, child mature, living; five and one-half hours after labor, twenty-four attacks in twenty-eight hours, then she became conscious, much albumen, which disappeared gradually by the fourth day; on account of threatening œdema pulm. tartar. stib. was given; fourteen days after, symptoms of pleuro-pneumonia appeared, and she died within three days. Post mort.: ichorous pleuritis, gangræna



pulmon. bilat., diphtheritic exudation on site of placenta, no peritonitis, nothing abnormal in the vessels of the uterus and parametrium.

20. Ipara, twenty-four years of age, two attacks when the orifice was completely dilated, forceps, child living; mature, after labor ten attacks in ten hours; albumen disappeared in two days.

21. Ipara, twenty-seven years of age, three attacks during the first stage in two hours; after dilatation of the os, forceps, child living, mature; urine scanty, with much albumen, next day urine copious, with a trace of albumen, disappeared the third day.

22. Ipara, twenty-six years of age, twins, living, eight months, normal labor; first attack, which was very severe, lasted half an hour the tenth day after labor, much albumen; the eleventh day four attacks in two and one-half hours, the twelfth day two attacks at short intervals; albumen disappeared in a few days.

23. Ipara, twenty-seven years of age, eight attacks before she came under observation, then five attacks in one and one-half hours, until the orifice was dilated; after this, turning and extraction, child living, eight months; after labor, five attacks in three hours, much albumen and casts; by the use of warm baths albumen diminished, but continued till after the confinement.

24. VII Ipara, thirty-eight years of age, suffering from morb. Br. before the pregnancy; three attacks during the labor; child macerated, six months; no attacks in childbed; albumen in the urine continued.

25. Ipara, twenty years of age, normal labor; six hours after, the first attack, then nine attacks in twelve hours; considerable albumen, which soon disappeared.

26. Ipara, eighteen years of age; first attack when the orifice was completely dilated; forceps; child living, mature, then three attacks in one hour; little albumen.

27. Ipara, eighteen years of age, eight days before labor twenty attacks in twenty hours; next day one attack, the third day another attack; much albumen disappeared in three days, no attack during the labor or childbed, which were normal; child dead.

28. Ipara, twenty-three years of age, conjug. vera 8.5, prolapse of the cord; child dead, perforation of the head; half an hour after labor the first attack; much albumen, which disappeared the next day.

29. Ipara, twenty-one years of age, first attack when the os was completely dilated, the second during the extraction with forceps; after the labor two attacks so severe that a fatal issue was feared, a respite of ten hours followed, then ten attacks in five hours, much albumen, casts, and blood in the urine; patient remained comatose, and died the next day from edema pulmonum. Post mort.: Edema cerebri, extravasation of blood in the cortical substance, beginning pneumonia, far advanced degeneration of the kidneys. Conjug. vera 8 cm.

30. Ipara, twenty-one years of age, three weeks before labor edema of the lower extremities, no albumen in the urine; a week

before labor universal edema; much albumen in the urine. After the first stage of labor, patient complained of dizziness and amaurosis; forceps, child living, mature; after labor, two attacks, then a respite of two hours, then again four attacks in six hours, albumen disappeared in two days.

31. Ipara, twenty-one years of age, first attack when the orifice admitted three fingers, then nine attacks in five hours, until the orifice was completely dilated, one attack during the forceps operation; child living, mature; after labor nine attacks in nine hours, little albumen after the first attack; much more after the last, endometritis cured.

32. Ipara, twenty-eight years of age, during the pregnancy a little albumen in the urine, labor normal; child living, mature; five hours after labor, the first attack, and then three attacks in four hours.

33. Ipara, had several attacks the day before she came under observation, then during the first stage of labor two attacks in four hours; spontaneous labor; child living, mature; much albumen disappeared in a few days.

34. Ipara, twenty years of age, normal labor; child living, mature; eighteen hours after labor, patient complained of beginning blindness; four and one-half hours after this the first and only attack; much albumen; in two days albumen and the diffuse neuritis disappeared.

35. Ipara, twenty-four years of age, labor normal; child living, mature; two and one-half hours after labor the first attack; much albumen in the urine disappeared in two days, but three attacks occurred the same day; after this, a little albumen in the urine; the fourth and eighth day after this, slight convulsions occurred.

36. Ipara, twenty-five years of age, after complete dilatation of the os complained of dizziness and headache; a little albumen in the urine; forceps; child living, mature.

37. Ipara, twenty years of age, first attack four days before labor; much albumen, urine scanty, the next three days urine copious with very little albumen, the fourth day more albumen; preparatory pains; two attacks; slept during the night, next day spontaneous labor; child living, mature; a little albumen during the labor disappeared in two days.

38. Ipara, twenty-nine years of age, eleven attacks in fourteen hours during the first stage of labor; spontaneous labor; child macerated, seven months; considerable albumen, which disappeared the next day.

39. Ipara, twenty-three years of age, normal labor; four days after, raving delirium, one hour after this the first attack, and in half an hour the second attack occurred; no albumen in the urine; the disordered state of mind continued for several days.

40. Ipara, twenty-two years of age, edematous swelling of the genital organs and lower extremities; albumen in the urine four days before labor, but gradually disappeared before labor commenced; labor normal; child living, mature; two hours after labor

headache, amaurosis (*retinitis e morbo Brightii*); moderate amount of albumen, nineteen hours after labor an attack; temperature 104, tracheal râles; the next day temperature 105, and the third day exitus lethalis by edema pulmonum, the emetics administered (tartar. stib.) were ineffectual. Post mort.: Acute morbus Brightii, edema pulmonum, exudation in all the cavities of the body, beginning peritonitis, purulent metrophlebitis, the cause of death edema pulmonum and sepsis.

41. Ipara, eighteen years of age; child living, eight months; one hour after labor the first attack, in sixteen hours twenty-nine attacks; considerable albumen, which disappeared in eight days.

42. Ipara, thirty-five years of age, three attacks during the first stage; spontaneous labor; child living, six months (died after three days); considerable albumen; edema of the lungs threatened, and an emetic was given; albumen disappeared in two days.

43. Ipara, twenty-two years of age, the first attack when the head emerged from the vulva; child living, mature; after the labor, three attacks in one hour; considerable albumen, which soon disappeared.

44. IIIpara, forty years of age, first labor normal, second and third labor breech presentation; child living, mature; thirty-one hours after, an attack, was unconscious three-quarters of an hour; cyanotic; pulse 120, respiration difficult; ether sulph. was given, recovered, but died five days afterwards suddenly with the symptoms of embolus of the pulmonary artery. Post mort.: Morbus Brightii third stage, the kidneys contracted to a third of their normal size, edema of the brain, of the lungs, purulent endometritis.

45. Ipara, twenty-six years of age, twenty-four hours before labor eight attacks in ten hours; labor spontaneous; child macerated, six months; much albumen disappeared in eight days.

46. Ipara, several attacks before she came under observation, then six attacks in ten hours; after this an intermission of seven hours, at which time the orifice was completely dilated and forceps applied; child dead, mature; albumen in the urine, one hour after labor another attack, and one hour after this another; albumen disappeared in four days.

47. IVpara, thirty-six years of age, three attacks during the first stage of labor; spontaneous labor; child macerated; eight months; much albumen disappeared in two days.

48. Ipara, twenty-one years of age, complained of nausea, headache, and three hours after this, the first attack, when the orifice was open sufficiently to admit one finger; much albumen, then sixteen attacks in fourteen hours, when the orifice was completely dilated; forceps; child living, nine months; albumen disappeared next day.

49. Ipara, twenty-seven years of age, first attack when the orifice admitted one finger; much albumen; after five hours the orifice was completely dilated, another attack occurred; forceps; child living, mature, albumen disappeared in five days.



50. Ipara, twenty-three years of age, first attack during the first stage, when the os admitted two fingers; eight hours after the orifice was completely dilated, and the head at the outlet, temperature 104; forceps; child living, nine months; much albumen, tracheal râles; emetics no effect; died next day from edema pulmonum.

51. Ipara, twenty-four years of age, was, when I saw her with Dr. H. Kudlich, suffering from general edema of the skin, hydrops ascites, much albumen in the urine; her health impaired, and seven months pregnant. We agreed to induce premature labor on account of her general bad condition. Before we did this, two eclamptic attacks occurred. After this, we did not hesitate any longer. I introduced an elastic bougie. In fourteen hours a dead child of seven months was spontaneously born. After two days, amaurosis occurred, which gradually disappeared after some weeks. Albumen in the urine continued for some days only.

52. Ipara, twenty-two years of age. I saw her with Dr. L. Bopp, when she was in the seventh month of pregnancy. During the night before, she had severe labor pains and headache; in the afternoon, at three o'clock, three attacks occurred at short intervals. In the evening, she was unconscious; much albumen in the urine, urine scanty, edema of the lower extremities, uterus firmly contracted, but on the os uteri no indication of beginning labor. Chloral hydrat., ten grams in divided doses, has been given per rectum. As her health was in good condition, we agreed not to interrupt the pregnancy. She was wrapped up in hot wet sheets for stimulating the secretion of the skin. The next day, her sensorium was quite free, and liquor kali ac. with inf. dig. was given. The albumen and edema gradually decreased; at the end of a week, the albumen increased again, patient had nausea and headache. Ten days after the first attack, she had again four attacks in fourteen hours; urine again scanty; the internal orifice permitted introduction of one finger. In order to hasten the labor, a bougie was introduced, and in three hours a living child of six and one-half months was born spontaneously. The next day, the urine was copious and contained less albumen. The patient was restless and sometimes delirious, but recovered completely in a short time.

Among these 52 cases were 43 primiparæ and 9 pluriparæ. In 28 (23 primiparæ, 5 pluriparæ) eclampsia occurred during the labor. In 11 eclampsia continued unabated and two patients died, in 4 the attacks abated and one patient died; in 13 the attacks ceased and one patient died after a single attack. In 19, 15 primiparæ, 4 pluriparæ, eclampsia occurred after labor, in one the tenth, in another the eighth day, in the others short time or some hours after labor, and three patients died. In 5 cases primiparæ eclampsia set in during the pregnancy and

in two of them it occurred during the labor. In none of these cases was blood-letting resorted to, nor was any operation performed before the orifice uteri was spontaneously completely dilated. It is very doubtful whether case IV. could have been saved by an earlier interference, but no interference would have been of any avail in the other fatal cases. The treatment consisted in subcutaneous injections of morphia or chloralhydrate per rectum; and when the patient could swallow, diuretica were given. The mortality, 7 out of 52, is small in comparison with others who have 20-30 per cent mortality; even this small mortality appears more favorable on closer examination. Case 44 died suddenly on the eighth day after eclampsia with symptoms of embolus of the pulmonary artery. This happens in cases of morbus Brightii without eclampsia, as I observed in another case in which the patient died suddenly during the labor, no morbus Brightii being suspected. On post mortem morbus Brightii was found, the kidneys atrophied to the fourth part of their normal size, dilatation of the ureters and pelves by pressure of the uterus. Edema of the lungs, hydrops of slight degree. In cases 40 and 50 sepsis contributed perhaps more to the fatal exit than eclampsia. Case 19 died from pleuro-pneumonia which began fourteen days after the eclampsia. The statistics, I think, encourage us to give nature a better chance than is usually done here. It is true that out of 28 cases of eclampsia during the labor, the attacks stopped in 13 cases and abated in 4 cases after the labor, but we have to bear in mind that in 11 cases the attacks continued unabated and in 19 cases occurred after the labor. Cases are often published, in which a very active treatment did not prove fatal, but every one knows of fatal cases which have not been published. Although the too active treatment cannot be accused in every case where there is a fatal issue, still the results are very far from being encouraging. As the matter now stands, it is not only justifiable, but very recommendable to abstain from a too active interference before the second stage of labor. It requires a very accommodating conscience to ascribe every fatal case to circumstances over which we have no control, and to attribute every successful case to our interference.

*Treatment.*

However different the opinions about the cause of eclampsia may be, it is universally admitted that the retention of the secretion of the kidneys is either the only or the paramount cause of eclampsia. Our attention must therefore be first directed to counteracting this disturbance. This can be done by increasing the secretion of the kidneys and by making use of our knowledge of the antagonism between the secretion of the skin and bowels and the secretion of the kidneys. Diuretica, sudorifica and cathartica are therefore indicated. *Liquor kali ac.*, *infus. rad. scillæ*, *digitalis* deserve more confidence than other diuretica.

Both baths, wrapping up in hot wet sheets are the best means for stimulating the secretion of the skin, whereby water and the ingredients of urine are made to exude. The increased secretion of the bowels likewise relieves the secretion of the kidneys. Emetica are very useful for removing the mucus from the throat and lungs, and vomiting lessens besides, as it has been demonstrated by experiments, the injurious effect of the retention of the secretion of the kidneys. Narcotica, though they have no direct influence on the cause of eclampsia, lessen its symptoms, as antipyretica do those of septicemia. *Morph. inject.*, or chloral-hydrate per rectum, 2 grams pro dos. repeated until complete narcosis is brought about, or *morph.* and chloral-hydrate together, but in smaller doses, are far preferable to chloroform. The dangerous symptoms which I have seen consequent upon the use of pilocarpine will deter me from the employment of this remedy in patients who are unconscious and can therefore not raise the mucus and are exposed to the danger of being drowned in their own fluid. It is very doubtful whether blood-letting ever has any beneficial effect, notwithstanding the many reports in its favor, but it is very often dangerous, as has been observed by Schröder and others. I never saw an indication for blood-letting. Blood-letting is totally discarded in the Vienna clinics, and the results are far better than anywhere else. Former very strenuous advocates of blood-letting now use it with much discrimination. Although eclampsia often occurs after labor, it cannot be denied that the termination of labor very often has the best effect. Large statistical tables show that the attacks stop in



one-third of the cases, in one-third they abate, and only in one-third they continue unabated after labor. The indication to expedite the labor is therefore undoubted. But on the other hand it is a mistake to think that all danger is past when the labor is over, as the frequent cases of eclampsia after labor show. Besides this, we have to bear in mind the dangers of a too active interference; the dangers of a too active interference are greater than that of eclampsia. A single case, as P. Reynolds' first (*Boston Medical and Surgical Journal*, Oct. 19th, 1882), must be, for every physician who has not a very accommodating conscience, sufficient to deter him forever from so hardy a proceeding. The gravity of that case is not lessened by the fact that the patient in the second case did not succumb; also a series of fifty successful cases cannot redeem it.

When the labor is so far progressed that the parturient woman can be delivered without danger to the cervix, it should be expedited either by forceps, when the head is already fixed in the pelvis, or by turning when the head is still movable at the superior strait. The bladder must be emptied from time to time.

Eclampsia during the pregnancy is no indication for inducing premature labor. The attacks are to be treated in the same way as during and after labor; and they will often disappear without inducing premature labor. Breus (*Archiv für Gyn.*, B. XIX., No. 2) also observed several cases. Such cases as my last are very exceptional. When there are other complications, as for instance general anasarca, hydrops, ascites, etc., then premature labor should be induced. If anybody should be afraid of letting pregnancy continue after the attacks, the inducement of premature labor could not be much condemned, but it would be by all means unjustifiable to resort to any violent measures. With due precautions against infection, the introduction of a bougie high up into the uterus is a reliable and safe procedure; it is also useful for increasing the pains during the first stage of labor. After the attacks are over, the treatment which is approved in kidney diseases should be continued until the patient has completely recovered.

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## THE DELIVERY OF THE AFTER-COMING HEAD BY THE OCCIPUT.

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AT 6.45 P.M., September 27th, 1881, I was called to the patient, forty-two years of age, in her seventeenth labor. She had always been attended by women, and never before had had any difficulty. The waters had escaped at 8 A.M., and had been in large amount, and immediately after the pains became severe. The attendants encouraged the patient to bear down, but little progress was made. Finally, at 6.30 P.M., an examination was made by one of the women, and a hand found in the vulva. I was immediately sent for, and, as is my custom, took my obstetric bag with me. The mother's pulse was weak and rapid, face expressing great anxiety and patient very restless, and pains severe. External examination showed the head at the superior strait almost in the median line, back anterior and slightly to the left, fetal heart 142 and heard below and slightly to the left of the umbilicus. The vagina was slightly moist and hot; right forearm down, hand at vulva; os patent for two fingers, but not dilatable, edge feeling like a fine steel wire; the uterus was firmly contracted, and cervix so thin as to seem like tissue paper. I made the attempt to carry the forearm by the face in hope that the head would then engage or I could do cephalic version. Failing in this, both on the back and in the knee-elbow position, I determined to resort to podalic version, and sent for Prof. Wm. P. Seymour as counsel. Prof. S., at my request, made an attempt to reposit the forearm, but did not succeed. I then proceeded, without an anesthetic, to pass my left into the vagina, the patient being on her back, but I could not pass the os; the patient was then put in the knee-elbow position, and I succeeded in getting hold of the left foot, and made traction upon it; after bringing the foot down, the patient was turned upon her back. In so doing, owing to the awkwardness of the position and the lack of care on my part to impress anterior rotation on the back of the child, I brought the back down *posteriorly*, and the *chin extended on to the pubis*. The trunk was livid, cord pulsating freely, and the chest heaved. *Traction being made upon the shoulders downwards and forwards, the body of the child was carried instantly over the mother's abdomen*; but this not immediately delivering the head, I applied Hodge's forceps posteriorly to the body of the fetus, and had the satisfaction of delivering an asphyxiated child, which lived. The diameters of

the head were as follows: Occipito-frontal,  $4\frac{3}{4}$  inches; occipito-mental,  $5\frac{3}{8}$  inches; fronto-mental,  $4\frac{3}{8}$  inches; cervico-bregmatic,  $3\frac{1}{8}$  inches; bi-parietal,  $3\frac{3}{4}$  inches. Child, a girl, eight and one-half pounds.

The interesting feature of the case is the ease and expedition with which the after-coming head was delivered by the procedure resorted to, of making traction upon the shoulders, at the same time carrying the body of the child over the mother's abdomen, vide Fig. 1. The case led to the investigation by me of the mechanism of the after-coming head and the procedures advised for facilitating its delivery, particularly in cases where the occiput is posterior. My interest in the subject was greatly increased by finding little or no mention in the obstetric works commonly used in this country of the procedure which proved so happy in this case, and which, I feel, deserves a far wider recognition and acceptance at the hands of the profession. Still further was my interest in the subject increased by reading an abstract of the proceedings of the Boston Obstetrical Society in the *Boston Medical and Surgical Journal* of March 2d, 1882.

At this meeting, Dr. Forster reported a case of "Chin upon the pubis after version," and in the report of the discussion which followed, no mention is made of the procedure to which I resorted, although one member speaks of having in "similar cases" delivered by carrying the body of the child over the perineum and back of the mother. These cases were not similar, but must have been cases where the head entered the pelvis partially flexed; for with a head of normal dimensions, the long diameter of the head—occipito-mental—of five and one-half inches could not be made to revolve around a centre one and one-half inches above the point of the coccyx and through even the oblique diameters of the pelvis.

In the case which I here report, having failed to impress anterior rotation upon the body, what was to be done? The child must be delivered speedily or it perishes; I could even at this late time have attempted, as recommended by Cazeau (Meigs' ed.) repeatedly to push up the body of the child, at the same time rotating its back anteriorly, and then have delivered as in an anterior position of the occiput, or I might have been able to rotate the face posteriorly, as recommended



by Cazeaux and Madame La Chapelle, by introducing a hand into the vagina and acting upon the occiput and face, and have delivered as in the last case. But it certainly was not one of those so-called "similar cases" where delivery could be effected by increasing flexion of the head, and making traction backward and downward upon the shoulders either with or without carrying the body of the child over the perineum of the mother. Had I resorted to either of the methods mentioned, the time necessary to accomplish even the rotation would have been fatal to the child, not to mention the possible delays in extraction when the case had been converted into an occipito-anterior position. The method I chose demanded no rotation; its only danger was from pressure upon the cord against the anterior wall of the pelvis, and its advantage was that traction upon the shoulders, combined with elevation of the child's body upon the mother's abdomen, caused not only the head to extend to its fullest limit, by reason of the direct and leverage action upon the chin and to descend into the pelvis, but the combined elevation of the body and traction upon the shoulders caused the trachelo-bregmatic diameter to revolve around the symphysis as a centre, and the occipital plane of head, the plane of the smallest diameters, the biparietal and the sub-occipito-bregmatic, to engage in turn with the plane of the inferior strait of obstetricians (the plane of rotation) and the plane of the bony arch, the plane of exit. Now if the voluntary powers of the patient are good, delivery can be effected by them alone; but if assistance is needed, forceps can be applied *behind* the body of the child in the occipito-mental diameter of the head, and the delivery effected as easily and speedily as in corresponding original occipito-anterior positions of the head; for the body of the child being already delivered, the head is, as it were, decapitated, and by previous passage of the body of the child the obstetric canal is already dilated.

In order to obtain a clear idea of the indications for treatment of the posterior positions of the occiput, it is necessary to divide them into three classes, viz.:

1st. A class marked by extension, as measured by the relation of the occipito-mental diameter to the axis of the superior strait.

2d. A class marked by flexion, as measured by the relation

of the occipito-mental diameter to the axis of the superior strait.

3d. A class intermediate between the two, in which the occipito-mental diameter cuts the axis of the superior strait more or less at right angles.

In the first class of cases, or cases with extension, the chin will be above the second parallel plane of Hodge, a plane drawn parallel to the superior strait through the sub-pubic ligament, and the occiput will be in the cavity of the pelvis,



FIG. 1.

and hence we will be hardly able to flex the head; for we cannot readily flex the occipito-mental diameter of five and one-half inches through the oblique diameter, which is also five and one-half inches. Therefore we must either rotate the occiput anteriorly and deliver as in occipito-anterior positions, or, which I think the better practise, increase extension by pulling downward and forward the occiput by traction upon the shoulders and favor the engagement of the occipital extremity in the inferior strait by carrying the body of the child over on to the mother's abdomen, as in the case cited, and

thus rotating the trachelo-bregmatic diameter about the symphysis, so that the occipital extremity shall coincide with the plane of exit. That is, we *must resort to extraction immediately without attempting, perhaps vainly, rotation or impossible flexion* (see Fig. 1).

In cases of the second class, which are marked by flexion, the chin will be below the symphysis, and it will be impossible to extend the occipito-mental diameter of five and one-half inches through an oblique diameter of five and one-half inches in the bones, and we must then resort either to posterior rotation of the chin by introducing the hand into the vagina, acting upon the occiput and face, and then delivering as in anterior positions of the occiput, or we may increase flexion by pulling down the maxillæ with the fingers, making traction downward and backward upon the shoulders, and either carrying the child's body over the mother's perineum or not.

In this procedure, I prefer flexion by pulling down on the maxillæ or edges of the orbits to introducing the fingers into the mouth and depressing the lower jaw, as recommended by Chailly and other obstetricians, inasmuch as by the last method in cases of difficulty we depress the lower jaw and, opening the mouth, leave the position of the head unchanged. The traction upon the shoulders is made much more efficient by carrying the child's body over the mother's perineum or, when her position favors it, as the head advances, over her back, inasmuch as we thus gain the advantage of the leverage action upon the occipital end of the occipito-mental diameter, thus delivering the head indirectly in the axis of the inferior strait of obstetricians, and thus evading to a great extent the more difficult delivery through the plane of the arch. In some cases, simple traction upon the shoulders, combined with carrying backward the child's body, will of itself be sufficient for delivery without attempting to increase flexion by depressing the maxillæ.

Between the two classes will be found a third, in which we find neither marked flexion nor marked extension, and our efforts must at first be tentative. However, if the head is high up and the maxillæ difficult to reach, I would proceed as in the first class of cases: pulling the shoulders downward and forward, bringing down the occiput, if necessary, with the



vectis, and carrying the body of the child on to the mother's abdomen, remembering that we can apply forceps if necessary. If the head is low down, carry the body over the mother's perineum, at the same time making traction upon the shoulders of the child. If flexion is needed, either the fingers or the vectis will produce it.

In this connection, I should like to call attention to the treatment of a certain class of cases of the after-coming head where the occiput is anterior. I mean those cases where the chin has early departed from the chest and the head is fully extended. In ordinary cases of version, the operation is so slowly performed that the contracting uterus, following up the diminution of its contents, keeps the head well flexed, but occasionally cases occur in which there is more extension than flexion. In these cases the common teaching is to increase flexion and deliver by traction upon the maxillæ and trunk, at the same time carrying the body of the child over the mother's abdomen. I propose, instead of resorting to these time-consuming attempts, that we should make traction downward and backward on the shoulders of the child and then carrying the body of the child over the mother's perineum and back, deliver as in Fig. 2. That this is perfectly feasible I am satisfied, inasmuch as the diameters of the head involved are the same as in occipito-posterior positions of cephalic presentations, with the additional advantage, that we have no shoulders to obstruct the engagement and delivery of the head, as is the case in the occipito-posterior varieties of cephalic presentations. In other words, the delivery resolves itself into that of an original occipito-posterior position of the head with the body already delivered, the chests and shoulders out of the way, as if the head were decapitated. The delivery, instead of being, as in ordinary cases, through the plane of the arch, will be, as in occipito-posterior positions of original cephalic presentations, in a plane intermediate between the plane of the bony arch and the plane of the inferior strait of obstetricians, owing to the necessary forcing back of the perineum. However, in the case of the after-coming head, the obstetric canal will have been dilated by the previous passage of the trunk. Some may regard this proposed procedure as impossible of execution, but not only does my own study of the diameters satisfy me that it is possi-

ble, but also the experience of Cazeaux and Hodge in converting mento-posterior positions of the face in the cavity of the pelvis into occipital presentations shows that the diameters of the head involved are not unfavorable to its execution.

As to the propriety of applying forceps in head-last cases, I think Meigs' advice always to have the forceps at hand ready for application will save many lives which would otherwise be lost. Their application certainly saved the child in the case I report, and I know of several others where they have done so, as well as several others where the neglect to have them cost

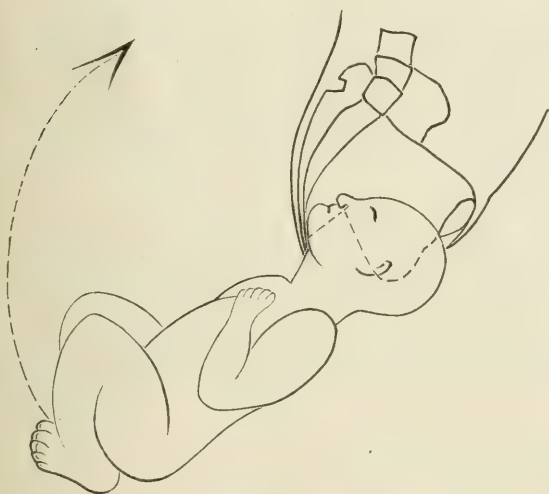


FIG. 2.

the child its life. In one case a friend sent for a brother practitioner to come with his forceps; the physician lived a quarter of a mile away and had to dress, and yet, when he came WITHOUT his forceps, owing to a mistake of the messenger, the child was alive, having been kept so by the attendant pressing back the perineum and admitting air to the child. While the consultant was gone for his forceps, the child died. In occipito-posterior positions with the head flexed, the forceps should be applied IN FRONT of the child's body, as also should be the case when the occiput is anterior and the head well flexed, as it allows the forceps to be applied in the occipito-mental diameter of the head. When the occiput is posterior and the head well ex-

tended, Chailly still advised the application IN FRONT of the child's body, but this would cause their application in the trachelo-bregmatic diameter of the head, and would be far more unfavorable than the application BEHIND the child in the occipito-mental diameter. In those cases where the occiput is anterior and the head well extended, I would apply the forceps BEHIND THE CHILD'S BODY, but *with the pelvic curve reversed*, the concavity toward the sacrum, and would make traction downward and around the coccyx as the centre of rotation.

The importance of these procedures, especially in posterior positions of the occiput, seems to have been very generally overlooked by obstetric writers. The procedure I resorted to in the case reported is not mentioned in Hodge, Moreau, Simpson, Churchill, Schroeder, Meigs, Velpeau, Playfair, Meadows, and there is absolutely nothing regarding it in Bedford, although his edition of Chailly contains by far the best description extant. Cazeaux merely says, "In *some exceptional cases* (the italics are mine), we might succeed in delivering the occiput first at the anterior commissure by carrying the trunk up in front of the pubis." Leishman ("System of Midwifery," Glasgow, 1873), speaking of cases where the occiput does not rotate anteriorly, says, "It would also appear, from cases which are recorded upon good authority, that the head in this position may escape by a movement which is not one of flexion, but extension. Naegele and Grenser give a cut of the procedure, but in their description miss its importance, and do not recognize the importance of traction upon the shoulder. In fact, Chailly seems to overlook the importance of the most powerful part of these procedures—the leverage obtained upon either the occipital or mental end of the occipito-mental diameter by traction upon the shoulders; for he says of a case where a practitioner had failed to deliver the after-coming head, "I introduced two fingers firmly on the lower jaw and two on the shoulders, and by means of a movement of elevation and direct traction, I extracted the head in less time than it has taken me to describe it. Unfortunately, the child was dead. The head was so firmly fixed that I was obliged to make very considerable effort, and I retained for several days marks of the contusion which the under-jaw produced on the middle finger of my right hand." Evidently implying that the efficiency of



the method was owing to the strong flexion obtained by depressing the lower jaw, and not, as I think, by the strong leverage of the occiput against the symphysis obtained by traction upon the shoulders. While I am hardly prepared to go as far as the unnamed author of a paper to the French Academy, mentioned by Chailly, who recommended as the result of his observations always to bring the back down posteriorly in cases of version, still I regard the method of making traction upon the shoulders and carrying, at the same time, the body of the child over the mother's abdomen, as very expeditious and safe, and *the only one to be employed when the head with the occiput posterior has entered the pelvis well extended*; and in cases where rapid delivery by version is required, it might be best for mother and child to bring down the back posteriorly and deliver as in the first class. At any rate, when the chin is anterior and extended, I regard all attempts at posterior rotation or flexion as calculated to sacrifice the child by delay in delivery.

NOTE.—Since this paper was written, April 19th, 1882, I have received both Lusk's and King's Midwiferies. They both—the latter most forcibly—refer to the procedure to which I call attention, but neither appears to recognize the importance of traction upon the shoulders, which is, in my opinion, the most powerful factor.

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## THE TOPOGRAPHICAL RELATIONS OF THE FEMALE PELVIC ORGANS.

BY

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(Part III., with six woodcuts.)

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THE URETERS.—These tubes convey the urine from the renal pelvis, which may be regarded as the expanded portion of the ureter, to the bladder. Their topographical relations are of

great importance; because an accurate knowledge of their course in the non-pregnant and pregnant female is necessary for the proper performance of certain surgical operations—chiefly those for the repair of vesico-vaginal fistulæ, and of gastro-elytrotomy and extirpation of the uterus. Among those who have devoted special attention to the subject may be mentioned Freund, Garrigues, Pawlick, and Polk. The points which seem to be those of controversy between the authors mentioned are (1) the exact relations of the point of entrance of the ureter into the cavity of the bladder to the uterine cervix and the internal orifice of the urethra; (2) the variations in the general course of the ureters produced by the enlargement of the gravid uterus; (3) the bony points which may be used as guides to these tubes during their passage through the pelvis; (4) the guides to catheterism of the ureters; and (5) the relations of these tubes to the vagina and broad ligaments.

The original investigations of Garrigues<sup>1</sup> were made upon the non-pregnant female, and are in accord, in most essential particulars, with the researches of Freund, who studied this subject with special reference to the perfection of the operation devised by him for extirpation of the uterus. Both of these observers have corrected and supplemented the statements made by Sappey, Luschka, and Savage, respecting the normal course of the ureters. As I am impressed from my own observations with the accuracy and completeness of some of Garrigues' deductions, I take the liberty of quoting from his paper, as follows:

"The ureter is the continuation of the renal pelvis. It lies behind or under the peritonæum, imbedded in very loose connective tissue, and is much longer than the direct line between its two ends. The left ureter begins somewhat higher up than the right. The distance from the starting-point of the right

<sup>1</sup>Gastro-Elytrotomy, N. Y. Med. Jour., Oct., and Nov., 1878. The same author has published subsequent measurements (made on the cadaver of a parturient woman who died a few days after the expiration of the full term of pregnancy) which partially confirmed those of Polk, AM. JOUR. OBSTET., Jan., 1883. It must be evident to all, however, that the cadaver of a woman who died *after delivery* is not as reliable a standard for measurements as a pregnant cadaver, if the determination of the position of the ureters during gestation is the question at issue.

ureter from the renal pelvis horizontally to the left ureter I have found to be two inches and a half (6.4 centimetres). From this point they go, excepting slight windings, paralled with one another down to the spot where they cross the iliac vessels, so that the distance between them at this latter point is likewise two and a half inches (6.4 centimetres). In this part of their passage they lie in front of the psoas muscle. The left ureter crosses the iliac vessels somewhat higher up than the right, the left lying in front of the lowest part of the common iliac artery, the right in front of the uppermost part of the external iliac artery. The right passes also in front of the external iliac vein, which here lies outside the artery. Consequently the left is also slightly nearer to the median line of the vertebral column. From this point they diverge, running downward, backward and a little outward, on the wall of the pelvis to a point near the *spina ischii*, at which point they are farthest separated from one another, namely, about three inches and a half (8.5 centimetres). The ureter lies outside the hypogastric artery. They run behind the broad ligaments down to the indicated point near the *spina ischii*, and bend then downward, forward, and considerably inward, so as to converge toward the bladder. They pass beneath the base of the broad ligaments, lying in the abundant cellular tissue found in this locality. They cross the cervix at some distance from behind, at an acute angle, so as to come in front of it and below it. They lie outside and above the anterior part of the side-wall of the vagina, if we will suppose such a thing to exist, on a spot as large as the tip of the finger. On reaching the wall of the bladder, they turn rather sharply inward and go less downward, until they open with a small slit in the interior of the bladder, at the outer angle of the *trigonum vesicale*. From behind they are seen to be united by a kind of ridge forming the base of the trigonum."

The same author then gives some measurements which are of value to the operative surgeon. These are embraced in the following quotation:

"I found the following distances: From the ureter horizontally to the horn of the uterus (the starting-point of the ovarian ligament), right, three-quarters of an inch (1.9 centi-



metre), left, an inch and one-eighth (2.9 centimetres); from the ureter, horizontally, to the junction of the body and the neck of the womb, right, three-quarters of an inch (1.9 centimetre), left, five-eighths of an inch (1.5 centimetre); from the ureter to the nearest point of the vaginal portion on either side, half an inch (1.3 centimetre); from the ureter where it enters the wall of the bladder to the utero-vaginal junction, right, three-quarters of an inch (1.9 centimetre), left, five-eighths of an inch (1.5 centimetre); this point is on a level with the os uteri; from the opening into the cavity of the bladder to the vaginal portion, right, half an inch (1.3 centimetre), left, five-eighths of an inch (1.5 centimetre); between both ureters, where they reach the wall of the bladder, two inches (5 centimetres); between the two openings of the ureters into the cavity, one inch (2.5 centimetres); from the point where the ureter passes under the broad ligament to the point where it reaches the wall of the bladder, one inch and one-eighth (2.9 centimetres); the course of the ureter in the wall of the bladder, nine-sixteenths of an inch (1.4 centimetre); from the opening of the ureter into the cavity of the bladder to the centre of the anterior lip of the os, right, three-quarters of an inch (1.9 centimetre), left, one inch (2.5 centimetres); these openings lie below the level and considerably in front of the vaginal portion; from the internal opening of the urethra to the os uteri, one inch and a quarter (3.2 centimetres)."

The deduction of Garrigues, that the vaginal incision in gastro-elytrotomy should be performed *below the ureter*, has been made a point of issue between that observer and Polk. The latter has confined his investigations to pregnant women, and has, in consequence, been led to some conclusions which differ from those of the author quoted. He believes that the ureter should lie below the point of extraction of the fetus in gastro-elytrotomy rather than above it, and hence below the seat of the vaginal incision, since experiments upon the cadaver showed that the ureter suffered laceration in one instance from extreme tension, when the vaginal incision was made below it.

In a later article, Garrigues' has acknowledged, however, that the incision, as suggested by Polk, may be made above the ureter with greater safety to the patient.

<sup>1</sup> AMERICAN JOURNAL OF OBSTETRICS, January, 1882.

The following quotation from the article of Polk<sup>1</sup> will show the points of variation from the non-pregnant standard which the ureters undergo in consequence of the altered position of the uterus during the latter months of gestation. He says:

"In the first place, I have found that the ureters do not follow the pelvic wall to a point near the ischial spine, as in the non-pregnant condition. I have found their courses to be as follows: Crossing the pelvic brim at the common iliac bifurcation, the left just behind, the right just in front, of that point, they descend into the canal to the brim of the bony pelvis, the point being about the synchondrosis. In this course, they accompany the internal iliac artery, the right in front of the vessel, the left crossing it obliquely. Reaching the bony brim (the ilio-pectineal line), they leave the pelvic wall, emerging from beneath the base of the broad ligaments (in pregnancy about on a level with the pelvic brim, and carried back on a line with the synchondrosis), and take a course downward, forward, and somewhat inward, passing about midway between the pelvic wall and the cervico-vaginal junction, but approaching very closely the antero-lateral wall of the vagina, as they turn more decidedly inward, on a lower plane, to strike the base of the bladder three-quarters of an inch below the cervix, terminating finally in the bladder at a point (the subject being on the back) just two inches below the spine of the pubes.

"A line drawn from the bifurcation of the common iliac to the spine of the pubes, I have found to correspond in the main to the line of the ureters. Along this line they have the following relations to the pelvic brim (in the recent state): At the bifurcation, half an inch below;<sup>2</sup> at the extremities of the transverse diameter of the pelvis, about an inch; and at the spine of the pubes, two inches below. As a whole, the tubes in the pelvis are situated upon a higher plane than in the non-pregnant condition, having been carried slightly upward while being separated from their close relations with the pelvic wall by the

<sup>1</sup> New York Medical Journal, May, 1881.

<sup>2</sup> This would *seem* to be an error (as first pointed out by Garrigues in his article of January, 1883), but Polk has explained that his measurements were made from the anterior edge of the psoas muscle, and that the term "below" used by him corresponds to the antero-posterior measurement in the standing posture of the woman.

ascending uterus. How far they may be elevated in a case of extreme pelvic deformity with a pendulous abdomen, with the uterus correspondingly displaced, I am unable to say; but I think it probable that, the bladder being empty and not dragged upward, thus preserving the normal position of the vesical end of the tubes, the displacement would not be such as to bring any part of them much above the points indicated."

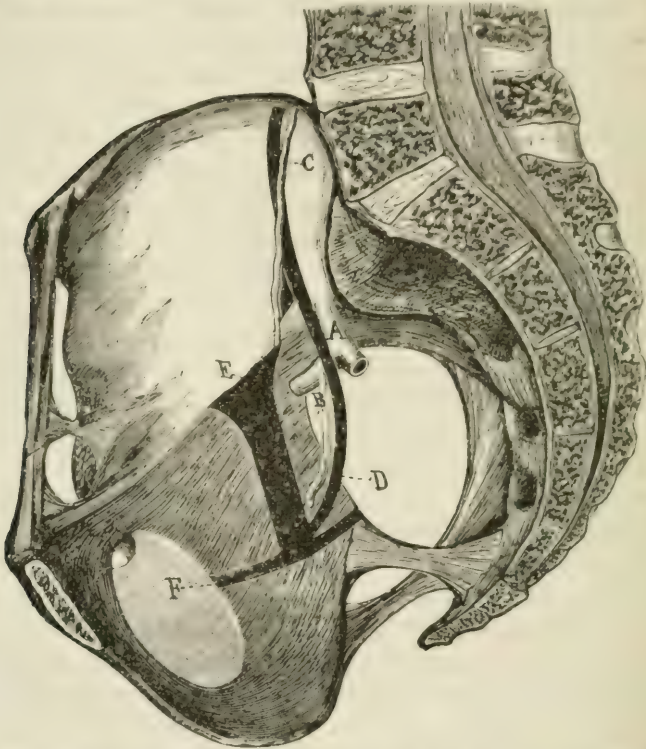


FIG. 15.—The right pelvic wall (Polk). A, internal iliac artery, its anterior trunk turned aside to show origin of uterine artery; B, uterine artery; C, ovarian artery; D, course of the ureter, projected on pelvic wall; E, line of pelvic attachment of the broad ligament of uterus in the nulliparous female; F, line of attachment of the levator ani muscle, marking the level of the base of the broad ligament.

These quotations will enable the reader to more readily contrast the latest researches of these investigators, and to form a definite conception of the course of the ureters in any case demanding a surgical procedure in which they are liable to be injured. It will be perceived that Polk designates certain bony and other fixed points which may prove valuable surgical



guides to the ureters in different portions of their course. He also establishes the fact that the tubes lie on a *higher plane in the pregnant state* than in the non-pregnant condition.

In the parturient cadaver examined by Garrigues (subsequent to his published measurements previously quoted), it was found that the point where the ureters crossed the common iliac arteries was situated one and five-sixteenth inches above the brim of the pelvis; at the end of the transverse diameter of the pelvis, the ureter lay two inches below in a vertical line (the subject lying upon her back); and, from the spine of the pubes, a

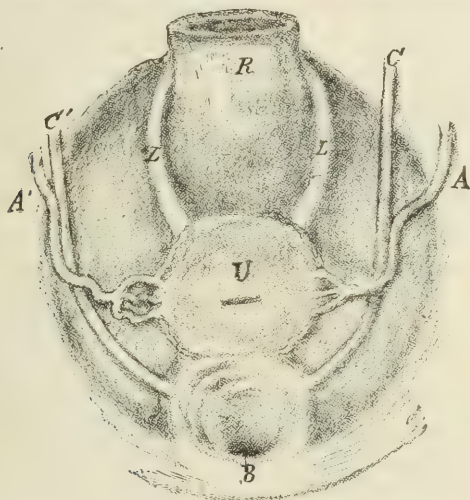


FIG. 16.—The floor of the pelvis (Polk). The uterus and broad ligaments, as well as the bladder, have been cut away on a level with the internal uterine os. Reproduced from a photograph. U, uterus; B, bladder; R, rectum; A, A', uterine arteries; C, C', ureters; L, utero-sacral ligaments.

straight line to the point of the junction of the ureter with the bladder measured three inches. These measurements differ from those of Polk, quoted in a previous page. Polk found, moreover, that the ureter reached the base of the bladder at the level of the os uteri. Garrigues found it to be three-quarters of an inch below the cervix; but he attributes this variation to an empty bladder, since Luschka places it at the junction of the upper and middle thirds of the anterior wall of the vagina when the bladder is distended (as shown in his drawing).

Subsequent investigations upon pregnant cadaver (unfortu-

nately very rare when pregnancy is far advanced) will help to positively determine many anatomical points pertaining to the operation of gastro-clytrotomy, which must still be considered as unsettled. As yet, there have been no published measurements made (to my knowledge) upon the *pregnant* cadaver to confute those of Polk.

The alterations in position and attachment which the broad ligaments of the uterus undergo, in consequence of the growth of that organ during gestation, shed much light, through the investigations of Polk, upon the relations which the ureters bear to these ligaments. In the nulliparous subject, the base of the broad ligament of either side rests upon the fatty tissue between the vagina and the recto-vesical fascia, which covers the upper surface of the levator ani muscle; hence the pelvic peritoneum sinks deeply in the pelvis at the sides of the uterus, and hugs the pelvic wall along a vertical line situated between the sciatic notch posteriorly and the obturator foramen anteriorly. During gestation the uterus drags the broad ligaments upward in proportion to its increasing size; so that at full term the bases of these ligaments lie on a level with the pectineal line, and extend from the pectineal eminence, anteriorly, to the synchondrosis, posteriorly (these limits being determined by the round ligaments of the uterus and the ovarian arteries). The separation of the laminae of the broad ligaments gives to that of each side a *triangular form* at the full term of pregnancy, the base of the triangle corresponding to the pectineal line, and its apex to the horn of the uterus. When parturition has been accomplished, the broad ligaments tend to slowly regain the position within the pelvic cavity which they originally occupied. Now, it can be readily understood why the ureters can be said to have no fixed relations with the broad ligaments, because they do not suffer the same displacement during the pregnant state. In the virgin and nullipara, they hug the pelvic wall in a plane posterior to the pelvic attachments of these ligaments. In the subject far advanced in pregnancy, they have little if any relation with them. In subjects who have borne children, they may lie between the laminae of these ligaments. Garrigues has taken issue with Savage because the latter author has described the ureters as passing between the layers of the broad ligaments. Polk has shown

that they may and may not follow such a course; thus sustaining the accuracy of both observers.

*Catheterism* of the ureters is sometimes demanded, chiefly as

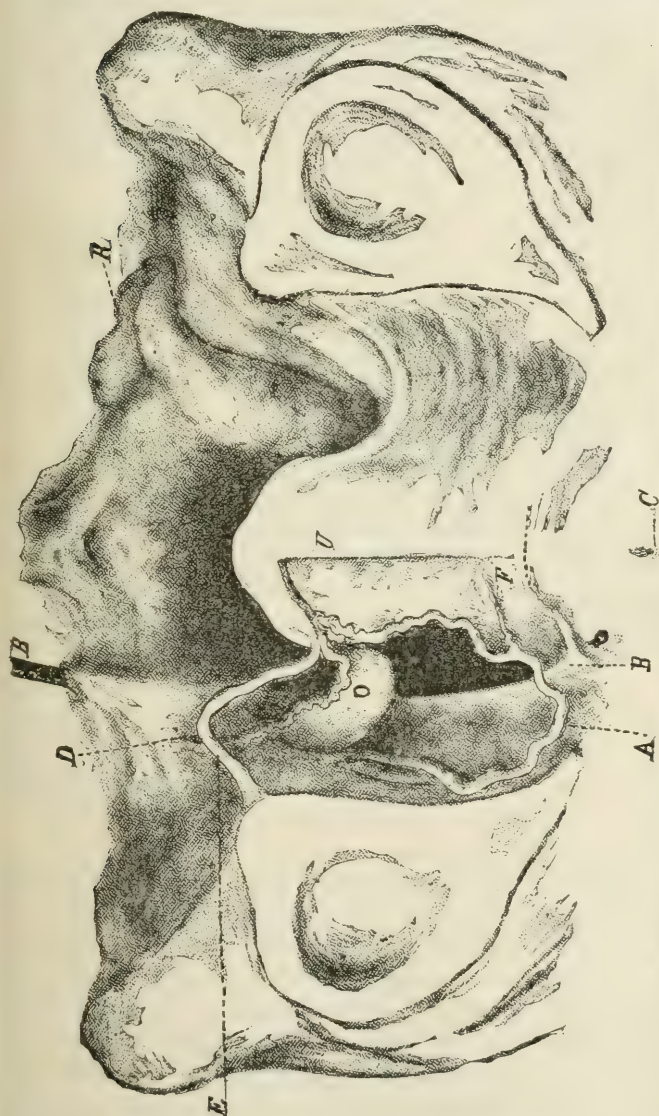


Fig. 17.—A photographic reproduction of a section of the pelvis, extending from the pectineal eminence, above, to the lesser sacro-sciatic foramen, below (fold). On the right hand, the broad ligament has been removed; on the left, it has been left intact. U, uterus, right side freed of peritoneum; O, ovary; C, base of bladder, showing urethral orifice, the organ being left away on a level with the utero-vesical peritoneal fold; the dotted line running across its upper edge corresponds to the utero-vaginal junction; above this, at F, we have the circular artery of the cervix; A, branch of uterine artery; B, B', ureter with a probe passing through it; D, ovarian artery; E, round ligament, held up to show the ovary and vessels behind it; R, rectum. The part marked C, is poorly shown, as it appears to have been out of the focus of the photographer's instrument.



for this purpose. Pawlick, of Vienna, however, has lately described a new method of exploring the ureters by which he claims that all preliminary operations may be dispensed with. He states that when a woman is placed in the genu-pectoral posture and the perineum is retracted, two furrows may be discovered on the anterior wall of the vagina, which, starting from a common point situated slightly behind the bulge of the urethra, diverge at an obtuse angle, and pass backward and outward. In the region of the cervix uteri a transverse furrow may also be seen to connect the extremities of these diverging furrows, thus forming a triangle which corresponds with the situation of the trigonum. He believes that the *diverging furrows* correspond with the line of the ureters, and that the orifice of each ureter may be found at or near to the point of intersection of the transverse and diverging furrow of the corresponding side. After a sound is introduced within the bladder, this author states that it is an easy matter<sup>1</sup> to guide the point of the sound into the mouth of the ureter with the finger in the vagina, if this guide be employed. This procedure is of especial importance in the operation for extirpation of the uterus, and the suggestion of Pawlick is worthy of a thorough trial. I have not been able to personally test it to my satisfaction, as the furrows have not generally been distinct, even in those cadavers to which I have had access soon after death. In some cases I could not detect them at all. My friend, Professor Polk, has assured me that he has been unable to verify the value of Pawlick's suggestion in his attempts made upon the living subject; and that the cadaver usually fails to bring the guides into prominence, although they can be easily recognized during life.

THE PELVIC PERITONEUM.—If, as Henle suggests, we suppose that those pelvic organs which rise above the plane of the superior strait were thrust upward during their development to reach their proper position, and thus were made to displace the peritoneum which naturally sought a lower level, we can form a clearer insight into its reflections than without some such homely illustration. In several pages which have preceded, the

<sup>1</sup> I doubt if any one who has attempted the step will agree with the author regarding its *ease* of execution, even if it has been successfully performed. The suggestion is as yet too new to be sustained as of great value or to be rejected as worthless.

reflections of the pelvic peritoneum have been discussed<sup>1</sup> — chiefly in connection with the uterus and bladder—and some of the cuts and diagrams incorporated will prove of the greatest assistance now in reviewing this important portion of topographic pelvic anatomy. The reader is referred, therefore, to all representations of sagittal sections of the pelvis previously given, and to the diagrams of Hodge on pages 367 and 368, should any portion of the description seem vague or incom-

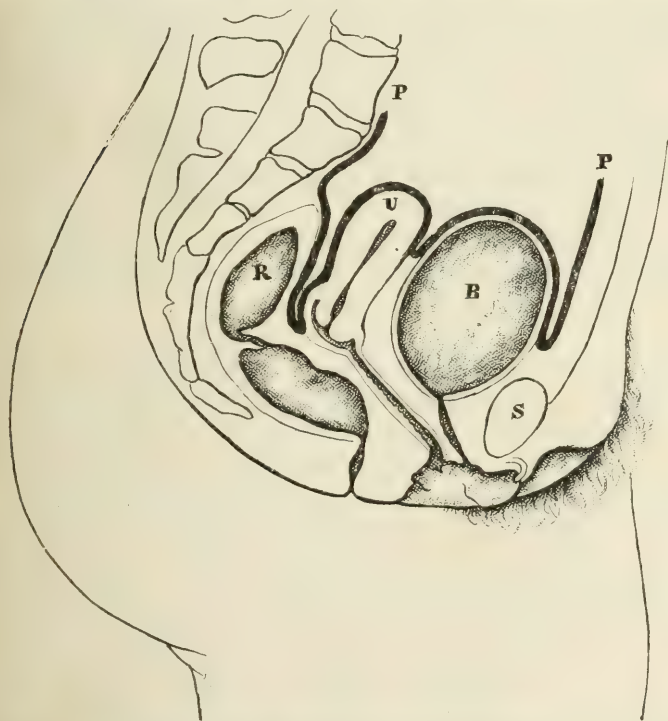


FIG. 18.—A diagram designed to show the antero-posterior outline of the pelvic peritoneum in the mesial pelvic plane.

P-P, peritoneum; R, rectum; U, uterus; B, bladder when distended; S, symphysis pubis; the *vesico-abdominal* and *urethro-vesical* pouches and *Douglas' cul-de-sac* are made very apparent.

plete. Hart and Barbour have lately published a work in which modifications in the appearance of the peritoneal reflections are made very clear by reproductions of several sagittal frozen sections, selected from other authors.

Savage very wisely remarks that the greater portion of the

<sup>1</sup> Pages 365, 366, 367, 368, 369, 372, 374, 382.

surgical interest which pertains to the peritoneum depends for the most part upon its substratum. The membrane itself consists simply of a delicate and highly elastic basement structure, with a covering of epithelium; and it certainly seems to be incapable of exerting any marked ligamentous action upon the organs with which it comes in contact. It is bound to those structures with which it bears relation by a layer of connective tissue—never entirely wanting—which is developed in inverse ratio to the firmness of its union to the parts so covered. The substratum to which Savage refers comprises certain involuntary muscular fibres which form a layer, which that author designates as a “platysma muscle,” over the uterus and its appendages and the ligaments connected with them. This muscular lining of the pelvic peritoneum may be traced along the Fallopian tubes and between the folds of the broad ligaments. The sacro-uterine and round ligaments are abundantly supplied with muscular fibres; some of which are derived, in the case of the former, however, from the cervix uteri and also from the vagina.

The round ligaments of the uterus, which seem to be a continuation of the muscular structure of that organ, are supplied, in part, from this platysma muscle. The utero-ovarian ligaments have a similar supply of muscular fibres which are prolonged from a set which accompany the spermatic vessels.

The elasticity of the peritoneum enables that membrane to undergo changes, as to its relations and dimensions, which are truly remarkable. The increase in size of the bladder during its full distention, and of the uterus during gestation, seem to produce no corresponding alteration in its fixed attachments. Savage tried the experiment of distending the bladder through the ureters (the urethra having been previously tied) until it rose above the level of the umbilicus; yet he found that the vesico-pubic fold of the peritoneum still extended to within one inch of the upper border of the symphysis.<sup>1</sup> We have reason to think that the pouch of Douglas, which extends between the rectum and the vagina, is seldom raised to any

<sup>1</sup>Hart and Barbour do not appear to fully coincide with this deduction. There seems to be no doubt that, in the *genu-pectoral* posture, the peritoneum passes from the anterior abdominal wall to the fundus of the empty bladder about one inch and a half above the symphysis pubis.



appreciable extent during gestation. It has been demonstrated, however, by Polk, that the *base of the broad ligaments are raised* to nearly the level of the brim of the pelvis at the full term of pregnancy, and their direction so altered as to cause their attachment to the bony pelvis to approach the neighborhood of the synchondrosis. In the operation of gastro-elytrotomy, it has, moreover, been demonstrated positively that the peritoneum can be easily stripped from its normal attachments in the neighborhood of the brim of the pelvis, and raised to such an extent as to admit of the extraction of a full-sized fetus beneath it.

Since the peritoneum, like all serous membranes, is a closed sac, which communicates directly with nothing except the lymphatic vessels, that probably open into its cavity by innumerable pores, it follows that foreign products within its cavity, such as blood, pus, inflammatory exudation, etc., can be removed only by the process of absorption or by actual disintegration of its elements.

In the diagrammatic cuts of Hodge which have been incorporated in previous pages of this article, it will be seen that the peritoneum is spread over the pelvic viscera from the line of its reflection from the wall of the abdomen and the inner surface of the false pelvis. When the bladder is empty, the uterus projects higher above the plane of the symphysis than any other pelvic organ, save the rectum. It appears, therefore, in most of the antero-posterior median sections of the pelvis to have an excess of peritoneal covering when compared with the bladder, in front, and the rectum, behind; since the whole of the posterior surface, the fundus, and the upper three fourths of the anterior surface is invested by it. From the sides of the uterus two folds of the peritoneum are reflected to the lateral wall of the pelvis—forming the broad ligaments of that organ. These broad ligaments are usually described as presenting three minor folds—the anterior, middle and posterior—which embrace respectively the round ligament, the Fallopian tube, and the ovary of each side. The external margin of the broad ligament is normally attached to the lateral wall of the pelvis along a line which is situated between the great sacro-sciatic notch and the margin of the obturator foramen as far down as the level of the ischial spine; its base

rests upon the connective tissue separating the vagina from the recto-vesical fascia which covers the levator ani muscle; its internal margin is attached to the side of the uterus; its upper or free margin is somewhat concave and extends from the side

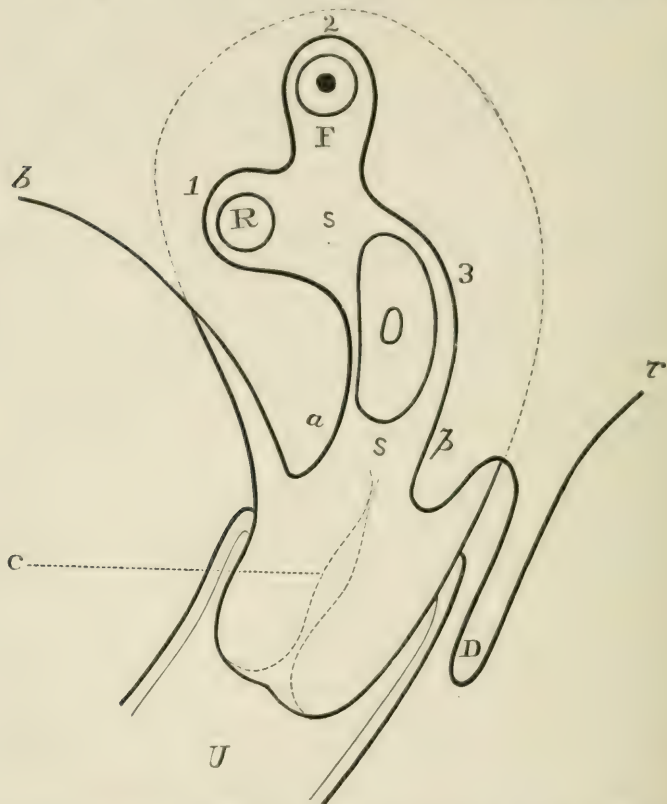


FIG. 19.—A diagram designed to show the three minor folds of each broad ligament of the uterus, and the structures which are contained between its two layers; as seen in a lateral sagittal pelvic section, cutting the ligament close to the border of the uterus.

1, 2, 3, anterior, middle, and posterior folds; R, round ligament; F, Fallopian tube; O, ovary, its anterior border lying in close contact with the peritoneum; V, vagina; D, the pouch of Douglas; c, outline of cavity of the cervix; a, anterior layer of broad ligament; p, posterior layer of same; b, reflection of peritoneum to bladder; r, reflection of same to rectum; s, space filled up with blood-vessels, nerves, connective tissue, lymphatics, and muscular tissue.

of the uterus to the lateral wall of the pelvis at a point on the pectineal line, situated in the virgin about midway between the sacro-iliac synchondrosis and the ilio-pectineal eminence.<sup>1</sup>

<sup>1</sup> After the female has once reached the full term of pregnancy, this point may approach nearer to the synchondrosis; as the broad ligaments

These ligaments, upon either side of the uterus, in connection with the uterus itself, form a septum which divides the pelvic cavity into an anterior and posterior space. In the former, the outline of the bladder is perceived, from a superior view of the pelvis, beneath the peritoneum, provided that the organ is distended; while in the latter, the rectum is seen escaping between the sacro-uterine ligaments which pass to either side of that tube to reach their sacral attachments.

The free margin of the broad ligament is made prominent by the presence of the Fallopian tube beneath it. With the growth of the uterus during gestation, the base of this ligament is gradually raised, until it reaches nearly to the level of the pectineal line at full term.<sup>1</sup> At the same time, the attachment of the superior border is gradually carried forward to the pectineal eminence and backward toward the synchondrosis, thus giving them a distinctly triangular form, the apex of which corresponds to the horn of the pregnant uterus. After parturition, the broad ligaments appear to slowly regain their normal relations to the pelvic structures.

Between the uterus and the vagina in front, and the rectum behind, may be seen a pouch of peritoneum which dips downward into the pelvic cavity far below the level of the other reflections of that membrane.<sup>2</sup> This is commonly called "*the pouch of Douglas*." It is an important surgical space, since fluid within the peritoneal cavity would naturally gravitate there and be discoverable by vaginal examination; while intestine, a retroverted or retroflexed womb, an impregnated ovum, a displaced ovary, and new growths of the uterus itself might possibly be detected in this region. The extent to which this pouch commonly descends into the pelvic cavity has been given in a foot note on a previous page. Like all serous pouches, it consists of two folds of the peritoneum.

From the anterior surface of the uterus, the peritoneum is prolonged to the bladder, thus forming the so-called *utero-ves-*

are carried backward by the uterus as it enlarges, and showly again their normal position.

<sup>1</sup> The late researches of Prof. W. M. Polk have added much to our knowledge of this subject.

<sup>2</sup> Pirogoff shows, in his frozen section, a descent of this pouch almost to the ostium vaginæ. This is, of course, an extreme limit, but is a suggestive abnormality to the operating surgeon.



*ical ligaments*, and, from the bladder, it passes to the anterior abdominal wall. When the bladder is distended, the reflection of the peritoneum from that viscus to the abdominal wall forms a pouch—the *pubo-vesical pouch*—which reaches to within one inch of the pubes, or even less.

The *round ligaments* of the uterus appear, through the investing peritoneum, as two curved ridges which pass from the sides of the uterus, in front of and below the attachments of the Fallopian tubes, to the internal opening of the inguinal canal. They lie therefore to the outer side of the bladder

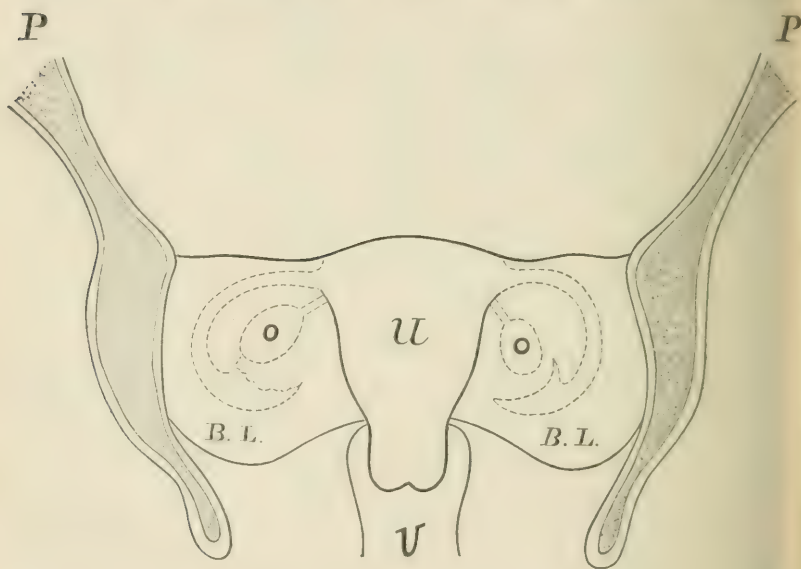


FIG. 20.—A diagram designed to show the attachments, outline, and some of the relations of the broad ligaments of the uterus.

P, pelvic bones; U, uterine body; V, vagina; O, ovary; F, Fallopian tube; BL, broad ligament. Note that the ovaries are represented as more nearly vertical than in most cuts, and that the Fallopian tubes are curved.

when distended with urine, but near to the pelvic wall. Within the inguinal canal, a prolongation of peritoneum accompanies them—the *canal of Nuck*. This sometimes remains open and gives rise to hydrocele of the inguinal canal.

By reference to Fig. 10 it will be seen that the utero-sacral ligaments are given off at a lower level than the broad ligaments; in fact they correspond nearly to the level of the

anterior wall of the vagina (as may be seen in Fig. 6) of which they are a practical extension and with which they are physiologically associated.

The situation of the ovary within the broad ligament of the uterus is on a lower plane than that of the Fallopian tube or the round ligament. The Fallopian tube encircles it, as it were, and the fimbriated extremity of that tube curves to reach the ovary. The disputed points pertaining to the relations between the ovary and the Fallopian tube will be discussed later.

The uterus is the most movable pelvic organ of those in relation with the peritoneum. The broad ligaments unquestionably assist to some extent in preventing its lateral and antero-posterior displacements.<sup>1</sup> The round ligaments tend possibly to prevent its backward displacement, but they are too lax to have any marked influence upon the womb. The utero-sacral ligaments act as an aid to the anterior vaginal wall in supporting that organ. Luschka has advanced the view that the muscular fibres of the utero-sacral ligaments assist in drawing the cervix backward and thus tend to cause anteversion of the fundus. I am inclined to differ from this view. The muscular fibres of these ligaments are so attached to the uterus as to be a practical extension of the fibres of the anterior wall of the vagina; hence if they contract they are opposed by the anterior vaginal wall, unless the uterus be drawn downward below its proper level, when both will act together and tend to replace it. The anterior vaginal wall in front, the muscular structure of the uterus itself which intervenes between the vagina and the utero-sacral ligaments, and the sacro-uterine ligaments behind, form what may be regarded as a *supporting beam* (Foster) which runs from the pubes to the sacrum, and the fibres of each are so closely intermingled as to be properly regarded as continuous. If the muscular fibres of the utero sacral ligaments act alone, the anterior vaginal wall is so placed as to resist their action (unless it be abnormally relaxed); since it is made

<sup>1</sup> These ligaments (being attached to the entire length of the body of the uterus) constitute in the nulliparous female an elastic septum which lies in the plane of the transverse pelvic diameter. Although lax, they thus tend to some extent to keep the organ erect, and afford an explanation of the lever-like action of vaginal traction upon the attitude of the womb (see page 249 which treats of the Hodge pessary).

tense in health in order to support the bladder which rests upon it.

*Special points of interest pertaining to the pelvic peritoneum.*—Some of the statements of previous pages may be thus summarized:

The *vesico-abdominal pouch* exists only when the bladder is distended. In the collapsed state of that organ the peritoneum passes directly over the fundus below the level of the horizontal plane which intersects the upper border of the symphysis. The depth of this pouch is probably modified also by the increased size of the uterus during gestation, irrespective of the distention of the bladder, as the peritoneum is lifted. This pouch contains no small intestine, either when the bladder is in systole or diastole (Hart). The view upheld by Savage that the point where the peritoneum leaves the anterior wall of the abdomen is not subject to change, is apparently confuted by some frozen sections which have appeared.

A *utero-abdominal pouch* exists when the bladder presents the Y-shaped section, as the peritoneum is then reflected directly from the anterior wall of the abdomen upon the anterior surface of the uterus, without any vesical elevation. In this case, small intestine fills the intervening space.

The *pouch of Douglas* has the following boundaries: Above it is limited by the utero-sacral ligaments of either side; below, it terminates commonly at the vaginal fornix, although Pirogoff has shown in his section an extreme depth of this pouch; anteriorly, it lies in relation with the fornix vaginae, and the supra-vaginal portion of the cervix; posteriorly, it lies in relation with the rectum. Hart claims that it normally contains intestine, but this view is not generally accepted. Its intimate relations with the cervix, the posterior wall of the vagina, and the rectum, gives it a surgical importance in excess of other peritoneal reflections. Being the most dependent part of the peritoneum, it has also a special importance in the diagnosis of pelvic effusions, displacements of the ovary, abdominal pregnancy, etc.

The peritoneum forms the *broad ligaments of the uterus*, which bind that organ to the lateral walls of the true pelvis. Between the folds of this peritoneal reflection, the Fallopian tubes of either side are found at its upper free margin, as well



as the ovarian artery : the ovaries lie in the posterior folds, but are attached to the anterior laminæ ; the round ligaments of either side run in the anterior folds in a curved direction ; in the region of its base, the uterine artery of either side is found ; finally, the ureters of either side pass beneath its base, but do not, as a rule, lie between its laminæ.<sup>1</sup> The attachments of this peritoneal fold to the side-wall of the pelvis in the nulliparous female has been admirably shown by Polk in a cut devised by him (Fig. 15). My own diagram (Fig. 19) will also help to interpret the arrangement of its laminæ.

These ligaments are not drawn tight, so as to act as lines of tension upon the uterus, but are quite lax in the non-pregnant female. *Gestation*, however, causes *marked alterations* in their position and bony attachments (Polk).

The cellular tissue found between the laminæ of the broad ligaments has been described by Guerin as distinct and separate from that of other regions of the pelvis ; a statement of importance if true, but one not generally accepted.

Displacements of the uterus cause coincident displacement of the broad ligaments. Cicatrices of these ligaments cause unilateral deviations of the uterus.

The blood-vessels, lymphatics, muscular fibres, and connective tissue found between the laminæ of the broad ligaments suggest some practical deductions, as follows : The two large arteries found between its layers (ovarian and uterine) lie at the extreme upper and lower limits of the ligament and are derived from different sources. Both supply the uterus with blood and anastomose freely ; hence, abdominal pressure upon the aorta in uterine hemorrhage would tend to only partially arrest the flow of blood, provided the spermatics were not controlled. Fortunately, the calibre of the uterine artery is greatly in excess of the ovarian in the pregnant state. The uterine artery bears a relation to the vaginal wall before it reaches the uterus ; a fact to be remembered in making incisions in that tube at its upper part, especially in the pregnant woman.

The *pampiniform plexus* of veins derives its blood from the uterus, ovaries, and Fallopian tubes, and its vessels coalesce into

<sup>1</sup> Polk has shown that only when these ligaments are attached near to the synchondrosis does the ureter pass between the two laminæ. This is stated by Savage to be the normal course of these tubes.

a single trunk, the internal spermatic vein (utero-ovarian vein—Sappey) which follows the course of the artery of the same name. This plexus is one of the most frequent seats of rupture in pelvic hematocele. It is important to remember that the veins of the uterus, vagina, bladder, urethra, and rectum anastomose freely with each other and with the veins of the perineum—constituting what may practically be considered as a continuous chain of vessels. This explains why, in pregnancy, when the veins of the pelvis are engorged, small wounds of the generative organs are sometimes associated with dangerous and even fatal hemorrhage.

The *lymphatic vessels* of the broad ligaments are derived from the borders and fundus of the uterus; after following the general course of the pampiniform plexus of veins, they unite with the lymphatics of the lumbar region. Leopold has pointed out that the lymphatics of the cervix follow a different course from those of the fundus and borders of the organ, since they empty into the glands of the pelvic cavity.

The *connective tissue* between the layers of the broad ligaments serves, as in other parts of the pelvis, to unite the organs with which it is connected to the pelvic walls, and also to fix them in their proper relations with adjoining structures. The physiological and clinical suggestions afforded by this type of structure will be considered later.

The modifications in the shape and attachments of the broad ligaments which are produced during gestation, have been referred to under the discussion of the ureters.

Most of the reflections of the peritoneum, thus far summarized, have been suggested by frozen sections of the pelvis, made through its different planes. Let us now consider the points of interest suggested by a superior view of the female pelvis in the recent state.

The uterus and its broad ligaments divide the pelvis into an anterior and posterior fossa (see page 367). In the former, the peritoneum is loosely attached throughout its entire extent. Where it is reflected from the anterior face of the uterus to the bladder, it hangs so loosely that, by a very slight elevation of the uterus, it may be brought into contact with the upper wall of the vagina. This fact should be borne in mind when surgical

procedures are attempted upon the anterior lip of the cervix, when raised above its normal plane.

The posterior fossa of the pelvis may be considered as consisting of two compartments: An upper, lying above the level of the sacro-uterine ligaments, called by Polk the "retro-ovarian shelves;" and a lower, the pouch of Douglas. The floor of the upper is broken by an opening, between the sacro-uterine ligaments, which enters into the lower. The form of the upper has been compared to two right-angled triangles united at their bases—the sacro-uterine ligaments; the other sides being formed by the base of the broad ligament of either side, and the pelvic wall. Upon the floor of this compartment or shelf, the ovaries rest when slightly prolapsed. The dimensions of this shelf are usually less upon the left side than the right, on account of the presence of the rectum; occasionally, however, they are symmetrical. The plane of the floor intersects the pelvic wall just below the great sacro-sciatic foramen.

Throughout the entire posterior fossa of the pelvis, the peritoneum is more closely attached to adjacent structures than in the anterior fossa.

The floors of both the anterior and posterior fossæ of the pelvis (save in the case of Douglas' pouch) seldom, if ever, fall below a plane which intersects the central point of the symphysis and the junction of the third and fourth bones of the sacrum. During advancing pregnancy, however, the lowest level is raised gradually till it reaches a plane which intersects the centre of the symphysis and a point just below the promontory of the sacrum (Polk). The highest limit is reached about the thirty-sixth or thirty-eighth week of gestation. At this time, the posterior fossa of the pelvis (except the pouch of Douglas), is entirely obliterated, as the floor of the "retro-ovarian shelves" lies above the brim of the pelvis; while the anterior fossa of the pelvis is rendered shallow. Polk states that the backward displacement of the broad ligaments diminishes also the antero-posterior and lateral measurements of the posterior fossa.

The pouch of Douglas is somewhat affected by the upward stretching to which the vagina is subjected during gestation, but the alteration in the level of its floor is small compared to that of the "retro-ovarian shelves." The sacro-uterine liga-



ments change their attachments to the sacrum<sup>1</sup> as the uterus enlarges—rising as high as the first bone, near to the promontory—and, as they mark the upper limits of the cul-de-sac, we find it converted into a deep and rather narrow channel, about large enough to contain a moderately filled rectum (Polk).

The pelvic peritoneum is in intimate relation with most of the large blood-vessels, which are distributed to the uterus, ovary, vagina, and bladder, and also with plexuses of smaller vessels which ramify in the subserous tissue of the pelvis. We are forced to admit two varieties of hematoma of the pelvic region, viz., subperitoneal or “cellular hematoma,” and intraperitoneal extravasation, which are properly termed “hematocele.” Savage mentions a long list of cases which resulted in death from one of these two causes. It seems to be believed by some authors, on purely anatomical grounds, that when a tumor, due to extravasations of blood, reaches an *extreme size*, it must be considered as intraperitoneal; since the fixed relations<sup>2</sup> of the peritoneum would apparently preclude any enormous escape from the blood-vessels beneath it, without the peritoneum were itself lacerated (Savage). In deciding as to the character of any such tumor, a layer of plastic exudation, if present upon the surface of an incapsulated intra-pelvic hematoma, might tend to mislead the examiner as regards the true situation of the peritoneum.

<sup>1</sup> Whether the alteration in the bony attachment is not rather apparent than real, there is good reason to doubt. The view of Fritsch, that the sacro-uterine ligaments have *no bony insertion*, but are limited posteriorly by the peritoneum is, to my mind, an error. It is possible that some of the muscular fibres inclosed in the folds of Douglas have no connection with the sacrum, but I do not think that it can be verified that all terminate within the peritoneum. The uterus, during gestation, unquestionably drags the folds of Douglas upward, but I doubt if the muscular layer beneath them (the true contractile elements of these folds) have their bony attachments displaced. It would seem to be in direct violation of all known laws pertaining to muscles.

<sup>2</sup> This view is not fully in accord with some late researches, which seem to demonstrate that the pelvic peritoneum is more readily separated from the pelvic wall than was formerly supposed. In gastro-elytrotomy, the fetus is removed beneath the peritoneum. During gestation, it also exhibits marked alterations from the normal standard, in respect to its pelvic attachments. Why, therefore, cannot blood extravasated beneath it be justly believed to lift the peritoneum, in those localities where that membrane can be separated from its bony relations in the virgin, without any marked difficulty?

THE IMPROVED CESAREAN SECTION,  
CONTAINING THE DESCRIPTION OF A KYPHOTIC PELVIS.

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BY

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(Continued from p. 350.)

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THE Cesarean section, which for a time seemed to be doomed to be supplanted by Porro's operation, or at least only to be used as a last resource in cases which did not admit of Porro's operation, raises its head again. All the authors we have quoted in the beginning of this article, with the only exception of Müller, are in favor of it. In this country very much has been done for the rehabilitation of the operation by the excellent researches of Dr. Rob. Harris. But when nowadays we speak of Cesarean section it is scarcely the same operation as the one to which formerly almost all patients succumbed, especially in the European hospitals. Numerous improvements have been proposed or tried, by which the chances for a good result have been materially increased. Cesarean section may be performed and is still sometimes successfully performed in a very primitive way, but since sometimes circumstances permit to do it with all modern improvements, and since in hospital practice the old operation has given such miserable results, it is useful to know the modifications, and wise to adopt as many of them as circumstances will permit, and as have proved or appear to be valuable. Cesarean section, especially here, in America, is so rare, that no one has much chance of acquiring great personal experience in its performance. Here, more than anywhere else, must we profit by the combined experience of different men.

Before discussing the different modifications proposed, I would call attention to the lesson taught by the results obtained in Cesarean section when repeated on the same individual. According to Lungren,<sup>1</sup> one hundred and nineteen operations were performed on forty-eight women, with a mortality of only eight mothers, *i. e.*, 6.83 per cent. These statistics have been

<sup>1</sup> AM. JOURN. OBST., 1881, vol. xiv., p. 87.

impugned by Müller,<sup>1</sup> who says that Lungren has admitted cases which long ago have been eliminated by the critics. Müller points to the frequency of rupture of the uterus in following pregnancies, but here, as in all his arguments, his evidence is taken from a time when no sutures were applied to the uterus, and consequently he fails to make his point. The same is the case when he tries to show<sup>2</sup> that the mortality after Cesarean operation is much greater than after Porro's operation, all his statistiss dating from the time before the introduction of aseptic surgery.

Even if some cases have to be eliminated from Lungren's list, and even if the mortality in repeated operations is not so small as he claims, it is still a well-ascertained fact that a woman who once has gone successfully through the ordeal of Cesarean section, has by far better chances than those who undergo the operation for the first time. In some cases this is explicable by the adhesions formed between the uterus and the abdominal wall, in consequence of which the peritoneal cavity is not opened in the second operation. But in others the womb has been found entirely free, and the explanation is then probably simply that the person who has been able to recover from so dangerous an operation, has an uncommon power of resistance to surgical interference. At all events the fact that the prognosis in repeated Cesarean section is comparatively good ought to be taken into consideration before deciding upon an operation by which subsequent pregnancies are rendered impossible.

Sometimes Cesarean section is not only the best, but the only possible operation, as in Sängers case,<sup>3</sup> where a fibroid as large as the head of a child, sprang from the posterior wall of the cervix.

Of all modern modifications of Cesarean section, the adoption of the *antiseptic method* is the most important, and will, no doubt, when strictly carried out, enhance the chances for a good result very materially. In my case, circumstances did not permit of full Listerism. The carbolic spray was not used, but it is a great question if this would have been an improvement. Many operators, especially in Ger-

<sup>1</sup> L. c., p. 33.

<sup>2</sup> L. c., p. 15-16.

<sup>3</sup> L. c., p. 34.



many, although staunch supporters of the Listerian treatment in all other respects, have discarded the spray.<sup>1</sup> In this case there was so much more reason to do so, as the patient was so exceedingly weak that the slightest extra depression, such as might be caused by absorption of carbolic acid from the perineal cavity, had to be carefully avoided. It might, perhaps, have been better to use the spray during the changes of dressing, air having direct communication with the uterine cavity through the drainage tube. But the hospital does not possess any apparatus for that purpose, and every time the dressing was changed, the vagina was disinfected, and the carbolized water came pouring out through the drainage tube. At all events, the case was treated more antiseptically than many which are supposed to have been so "with all antiseptic precautions." This means, according to different operators, the most different things. It will be very interesting at some future date to examine the results obtained in Cesarean section, when really performed according to Mr. Lister's principles. So far, such operations are too few in number to prove anything. It would not be worth while yet to search for them. But, looking over some of the reports of cases from the last few years, I have met with the following cases, in which some kind of antiseptic treatment was used, ranging from the application of a compress soaked in carbolized oil to full Listerism, inclusive of spray.

<sup>1</sup> "Away with the Spray," was the title of an article by Bruns, published in *Berliner Klinische Wochenschrift*, 1880, No. 24, which has had great influence on his countrymen.

*Cases of Cesarean Section Performed with more or less Antiseptic Precautions.*

DATE.	OPERATOR.	INDICATIONS	CONDITION OF PATIENT.	SUTURES.	RESULT.		REFERENCE.
					MOTHER.	CHILD.	
1 Nov. 5, 1878.	Sänger. . . . .	Contracted pelvis.	Fistula after operation for hydronephrosis. 7 days in labor.	4 deep, 6 superficial; carbolized silk.	Recovery . . .	Dead before operation.	Sänger: Der Kaiserschnitt, p. 29.
2 Mar. 7, 1880.	Schlemmer. . . . .	?	?	1 deep; carbolized silk.	"	Living. . . . .	Schlemmer: Die Porro-Op'n, p. 22.
3 May 25, 1882.	Leopold. . . . .	Contracted pelvis.	Very healthy. . . . .	8 deep, not comprising decidua; silver.	"	"	Archiv. für. Gyn., xix., 3, p. 401.
4 1878.	G. E. Walton, Cincinnati.	do.	Cachexia. . . . .	1 deep; silver. . . . .	D. 15th day. Exhaustion.	"	Centrallbl. f. Gyn., 1878, ii., p. 262.
5 1878.	H. Moynis, London.	do.	Osteomalacia. . . . .	5; catgut. . . . .	Death. Peritonitis.	Dead before operation.	Ibid., p. 334.
6 1879.	Kaltenbach. . . . .	Carcinoma of rectum.	Exhausted. 3½ days in labor.	15; silk. . . . .	D'th. Septic peritonitis.	do.	Ibid., 1879, iii., p. 441.
7 1879.	Dell'oro. . . . .	Con'd pelvis of rectum.	?	None. . . . .	Recovery . . .	?	Ibid., p. 607.
8 May 8, 1875.	S. S. Langren, Toledo, O.	do.	Good. . . . .	5; silver, not comprising decidua.	"	Living. . . . .	AM. Jo. OBSTET., 1881, p. 78.
9 May 22, 1880.	do.	Same patient	Good. . . . .	12; horse-hair, through outer half of wall; careful adaptation of peritoneal edges.	"	"	Ibid., p. 81.
Nov. 17, 1874.	C. Olcott, Bklyn, N.Y.	Fibroid. . . . .	Exhausted. . . . .	None. . . . .	"	Dead. . . . .	Ibid., 1879, p. 312.
10 Nov. 6, 1880.	M. Baker, Stockwell, Ind.	Fibroids. . . . .	Good; 3 days after rupture of membranes.	4 deep; silk, not comprising decidua.	"	Living. . . . .	Ibid., 1881, p. 596.
11 June 30, 1880.	A. S. Kirk-Louisville, Miss.	Neg'd cross-presentation	Exhausted. . . . .	None. . . . .	"	Dead before operation.	Am. J. Med. Sci., April, 1882, p. 376.
12 Dec. 7, 1880.	F. K. Ainsworth, Prescott, Ariz.	Contracted pelvis.	Exhausted. 4 days.	In labor 4 silver	Death. Peritonitis.	Living. . . . .	Ibid.

This little list, which does not pretend by any means to be complete, contains twelve cases with eight recoveries and four deaths. If we were sure that it contained all cases, or that those not reported, or at least not reported in the periodicals I have examined, presented a similar death-rate, the results would be better than of any of the substitutes for Cesarean section. Since the disease for which the operation was undertaken, as well as the condition of the patient at the time of the operation, and the use of uterine sutures have undoubtedly much influence on the result, I have indicated these circumstances.

The best *time* for operating is commonly taught to be the end of the first stage, when the os is fully dilated, and the membranes are ready to burst. The only important thing, however, is, that strong and frequent labor pains be present, so that we can rely on them, besides the elasticity of the uterine wall, for the prompt diminution of the uterus by muscular contraction after the removal of the fetus. On the other hand, the great importance of operating before the patient is exhausted, and the soft tissues are bruised between the advancing fetus and the resisting maternal parts, is now generally recognized.

R. Barnes<sup>1</sup> says that Braxton Hicks brought on labor a fortnight before term as a preparation for the Cesarean section, influenced by the opinion that, by so doing, the uterus, taken at a period prior to the highest degree of degeneration of its muscular fibres, would heal better. Barnes himself, although he is not disposed to think that "the degree of fatty change observed in the mature uterus" is any impediment to reparation, prefers likewise to induce premature labor some day during the estimated last fortnight of gestation, because, by selecting our own time, we may have daylight, the assistance of colleagues, and every appliance that may be thought useful. This pretended fatty degeneration of the muscular tissues does not exist. At the time of parturition, there is no other fatty degeneration than that between the two layers of the decidua, by which the the inner one is thrown off together with the ovum. I have convinced myself by microscopical examination both of the uterus in the above-described case and in one of rupture of the uterus<sup>2</sup> that, at the end of pregnancy, the muscular substance

<sup>1</sup> Barnes: *Lectures on Obstetric Operations*; London, 1870, p. 335.

<sup>2</sup> *AM. JOURN. OBST.*, 1881, vol. xiv., pp. 403-406.



is in a perfectly healthy condition, and it would be strange indeed if it were otherwise, since the enormous hyperplasia and hypertrophy of muscular fibres going on during pregnancy has for its object the expulsion of the child through a canal often offering considerable resistance. The physiological fatty degeneration does not begin until after the birth of the child, when, in consequence of diminished blood supply, the muscular fibres are no longer sufficiently nourished. Thus, regard to this supposed fatty degeneration would be no cause for premature interference. The other considerations may in particular cases have weight enough to render the inducement of premature labor preferable, but as a rule I would prefer to wait till labor has begun naturally, in order to have the best chances for powerful contraction of the emptied uterus, a point of vital interest to the mother. In the above case, there was so much more reason to wait as the patient's condition improved during her preparatory treatment until an unforeseen hemorrhage again jeopardized her life.

Guéniot<sup>1</sup> has advised to *rupture the membranes before operating*, because experience had shown that, in a great number of the successful cases, the waters had broken several hours before. In case decomposition had taken place, which may be supposed where the child is known to have been dead for some time, and if the uterus is opened in situ it would be wise to follow this advice, but if the uterus is turned out of the body, as in Müller's method, it is of less importance, and might even render impossible the application of the elastic tube round the cervix.

We need not be afraid of rupturing the membranes, on account of the danger of wounding the fetus. In my case, there was not left a drop of amniotic fluid in the womb, and yet I did not experience the least difficulty in incising this organ without injuring the child.

The *incision through the abdominal wall* was in our case made so high up because it was thought convenient, which indeed it proved to be. It corresponds also almost literally with Playfair's<sup>2</sup> precept to carry the incision from a little above

<sup>1</sup> Guéniot: De l'opération Césarienne et des modifications qu'elle comporte; Bulletin général de thérapeutique, 1870, lxxix., p. 126.

<sup>2</sup> Playfair: Science and Practice of Midwifery, London, 1876, vol. ii., p. 222.

the umbilicus down to about three inches below it. Barnes<sup>1</sup> teaches likewise to stop at this distance above the symphysis pubis. But when we consider that union by the first intention may not take place, and that it may become necessary to establish a communication with the outer surface through the lower end of the abdominal wound, it would seem safer to follow the rule laid down by others, such as Chailly-Honoré,<sup>2</sup> Naegele,<sup>3</sup> Spiegelberg,<sup>4</sup> and Lusk,<sup>5</sup> who recommend to extend the incision down to from two to four centimetres above the symphysis pubis.

The length of the incision should be great enough to extract the child with ease, or, if Müller's method be adopted, to turn out the uterus with the child, but in either case no longer than what is necessary. Guéniot<sup>6</sup> warns against the unnecessarily long incisions often made, and indicates sixteen to eighteen centimetres as sufficient. Mine was only thirteen, and gave all desirable facility for the extraction of the child, the stitching of the womb, and the *toilette* of the peritoneal cavity.

The greatest danger during the old-fashioned Cesarean operation arises from the hemorrhage caused by the incision of the placenta if it is implanted on the anterior wall of the womb, which is the case in about fifty per cent of pregnant women. Halbertsma, of Utrecht (Holland), has in one case succeeded in *locating the seat of the placenta* before incising the womb by means of an exploratory trocar. If we hit the placenta, there comes only blood through the canula, even when the trocar is pushed in very deep. If we do not hit it, the liquor amnii will soon make its appearance, or we will soon reach the fetus, and feel its movements. In his case, Halbertsma found that the placenta was inserted on the anterior wall, but more toward the right side than the left. The uterus was therefore drawn over to the right side, and the incision made as far over to the left as possible. Although Halbertsma was successful in his case, the method he recom-

<sup>1</sup> L. c., p. 339.

<sup>2</sup> Chailly-Honoré: *Traité pratique de l'art des accouchements*, 6th edition, Paris, 1878, p. 709.

<sup>3</sup> Naegele: *Lehrbuch der Geburtshülfe*, 7th edition, Mainz, 1869, p. 413.

<sup>4</sup> L. c., p. 857.

<sup>5</sup> Lusk: *Science and Art of Midwifery*, New York, 1882.

<sup>6</sup> L. c., p. 123.

mends would seem to be objectionable in more than one respect. In order to find the limit of the placenta, it will be necessary to plunge the trocar in at different places, and these wounds may become channels through which infectious substances from the inside of the uterus reach the peritoneal cavity. Next, the danger of injuring the fetus cannot be left out of consideration. Finally, the incision on the side of the uterus, being nearer the large vessels which run outside the edge and send large branches off into the uterine substance all the way up to the fundus, is more apt to cause dangerous hemorrhage than one made in the median line.

Guéniot<sup>1</sup> proposed already to "operate outside of the abdomen." He passed a metallic wire through the upper part of the uterine wall, and directed an assistant to pull it forward during the extraction of the child. This was a step in the direction of Müller's operation, and since it has occasionally been found impossible to turn out the gravid uterus, this method may be worth keeping in mind. Another way is to press on the uterus from behind, through the vagina.

*Constriction of cervix.*—The hemorrhage, whether from the placenta or from uterine sinuses, being the chief danger during the performance of Cesarean section, it would be very desirable, if possible, to bring about similar conditions as in Esmarch's so-called bloodless operations. This procedure was first advocated and tried on animals by Rein,<sup>2</sup> of St. Petersburg, but P. Müller<sup>3</sup> found it impossible to constrict the uterus in situ before emptying it. He, therefore, turned the uterus out of the abdominal cavity, and put a constrictor round the cervix before he incised the womb, which procedure has proved a decided improvement on the original Porro operation.

It is difficult to understand why the constrictor cannot be passed round the cervix, the uterus remaining in situ, by some instrument like Belloc's tube for tamponing the nose, or an elastic catheter with stylet, or the uterine sound bent in a proper way. This would have the advantage of rendering superfluous Müller's long incision and the attendant danger of prolapsus of the intestines. But even if it should prove

<sup>1</sup> L. c., p. 126.

<sup>2</sup> Rein, in *Annales de Gynécol.*, Feb., 1881; *Centralbl. f. Gyn.*, vol. v., p. 324.

<sup>3</sup> L. c., p. 40.



necessary, in order to pass the constrictor round the cervix, to turn out the uterus with the child in it, the advantage of controlling the hemorrhage is so great that it entirely outweighs the disadvantages of the long incision. Such a temporary compression was exercised in a case by Litzmann<sup>1</sup> by means of an elastic tube wound several times round the cervix after the womb had been tilted out of the body. Thus the bleeding was restricted to the escape of the blood contained in the uterine wall. Braun von Fernwald has found the head impacted so that he could not constrict the cervix. To others, it has happened to comprise fetal limbs or the cord in the ligature.<sup>2</sup> One would think that it must be possible to avoid the first by pushing them back, as Litzmann did in the just mentioned case. The second would only necessitate the removal of the loop of cord comprised in the ligature after the removal of the child, and the tightening of the ligature if hemorrhage should occur.

If, from some cause or other, it be impracticable to constrict the cervix before incising the uterus, it is advisable to pass a rubber tube around it immediately after the removal of the child, so that if hemorrhage should occur during the removal of the secundines and the tightening of the stitches, it may be promptly arrested by drawing the cervical constrictor taut.

According to Müller,<sup>3</sup> the best way of compressing the cervix is to use an elastic tube, compress the crossed ends with a dressing forceps, and ligate both ends behind the point of compression, with a thick silk ligature. This, he says, is safer than to tie the second knot with the hand, and takes scarcely more than a minute to do.

If the uterus is turned out of the body, it has been recommended by Frank,<sup>4</sup> in order to prevent prolapse of the intestines, to *stitch the abdominal wall behind it before opening it*. If a constrictor is used round the cervix, which I take to be of much greater importance, since the intestines may be retained by sponges or cloths, any delay in the removal of the child ought to be avoided, in order not to imperil its life unnecessarily.

<sup>1</sup> Centralblatt für Gynäkologie, 1879, vol. iii., No. 12, p. 292.

<sup>2</sup> Sänger, l. c., p. 162.

<sup>3</sup> L. c., p. 43.

<sup>4</sup> Frank, in Centralbl. f. Gynäk, 1881, p. 602.

Leopold,<sup>1</sup> after having extracted the child, turned out the uterus, tightened a couple of sutures which had been inserted near the upper angle of the abdominal wound before incising the womb, and *covered the whole abdomen behind the uterus with a piece of gutta serena tissue*, which had been kept in five per cent carbolic water. This latter procedure seems worthy of imitation in all cases in which the uterus is turned out. It takes no appreciable time, and it prevents, to a certain extent, blood and liquor amnii from entering the peritoneal cavity.

As it has been proved in a conclusive way by Wegner<sup>2</sup> that what we call shock is in a great part due to refrigeration, *the uterus and other exposed parts ought to be kept warm* by cloths dipped in carbolic water or diluted chlorine water, or a weak solution of chloride of zinc (0.2 per cent). The second of these is Hegar's common disinfectant,<sup>3</sup> the third has recently been introduced by Kocher, of Bern.<sup>4</sup>

The uterine incision is commonly made in the median line. Recently Kehrer<sup>5</sup> has recommended to make a *transverse incision* through the anterior wall at the level of the internal os. He has done it twice, and claims as advantages of this method 1st, that the wound is less apt to gape; 2d, that the placenta is rarely reached; 3d, that a shorter incision of the abdominal wall is required(?); 4th, that in most cases the head will be delivered first; 5th, that the peritoneum is loosely attached to the muscular tissue in this part of the organ, and consequently can easily be displaced and brought together by a special suture. All these points except the third are based on anatomical facts, and are undeniable advantages, but I think that, with the exception of the second, they are not important enough to counterpoise the very serious objection that the transverse incision, when it shall be long enough to permit an easy exit of the child, comes in dangerous neighborhood of the edges of the uterus with their large vessels. But it is only fair to add that my specimen shows that an incision of the same length

<sup>1</sup> Leopold, in *Archiv f. Gynäk.*, 1882, vol. xix., p. 403.

<sup>2</sup> Wegner: *Chirurgische Bemerkungen über die Peritonäalhöhle*, in *Langenbeck's Archiv*, 1876, vol. xx., No. 1, p. 51, seq.

<sup>3</sup> Hegar: *Die Kastration der Frauen*, Leipzig, 1878, p. 99.

<sup>4</sup> *Centralbl. f. Gynäk.*, 1882, No. 13, vol. vi., p. 201.

<sup>5</sup> Kehrer, in *Archiv f. Gynäkol.*, 1882, vol. xix., No. 2, p. 180.

might have been made, without interfering with the chief trunks, in the locality Kehrer indicates, namely, one centimetre above the bottom of the vesico-uterine excavation.

Another objection to Kehrer's transverse incision is that it is performed so low down that it will scarcely be feasible to apply the elastic constriction under it, or that at all events the tube would be very liable to slip after the removal of the child. It has therefore been proposed<sup>1</sup> to compress the cervix with Péan's compressors.

Guéniot<sup>2</sup> advises to *wait three minutes or more before removing the secundines*. This would seem to be a very excellent thing, if the placenta is situated on the posterior wall of the uterus and the bleeding is not considerable, and under all circumstances, if hemorrhage is prevented by compression of the cervix. By this means we allow nature to do her work. Retraction and contraction diminish the bulk of the uterine tissue, the walls of the venous sinuses become pressed against one another, and the remaining blood coagulates. During this process the placenta is allowed to remain undisturbed as a kind of natural tampon, as in the great majority of normal births where there is a shorter or longer interval between the expulsion of the child and that of the afterbirth. By thus conforming to nature's methods we will doubtless very much diminish the danger of hemorrhage following the removal of the cervical constrictor.

Equal in importance to the antiseptic method and the constriction of the cervix, is the coaptation of the edges of the uterine wound by means of *sutures*. This was first done as early as 1769 by a French surgeon by the name of Lebas. Although the patient made an excellent recovery, the method was universally condemned, and seventy years elapsed before a German surgeon by the name of Wiefel stitched up another uterus. This case was likewise successful, but nevertheless we find again an interval of thirty-nine years before the third operation of the kind was performed by Godefroy, again with success.<sup>3</sup> Since 1840 the use of sutures has become more general, but has still its adversaries.

<sup>1</sup> Säger, in Archiv für Gynäkologie, 1882, vol. xix., No. 3, p. 375.

<sup>2</sup> L. c., p. 126.

<sup>3</sup> Säger, Kaiserschnitt, p. 79 seq.



In olden times surgeons were afraid of causing inflammation by introducing sutures which they could not get out again ; nowadays we know that different substances, such as silver, silk, rubber, etc., may be left in the peritoneal cavity without doing the least harm, provided they be aseptic. There is, therefore, no longer any excuse for not using the suture. Experience shows that the uterine wound can unite by the first intention, and consequently it ought to be treated like any other wound. Some think it is superfluous to stitch the uterus, because the wound sometimes has been united by the first intention without any suture, but we need not draw on our imagination to see how rarely this will happen. We have only to read the reports of autopsies performed on patients having died after Cesarean section, in order to find that the condition most commonly found is a gaping uterus and a peritoneal cavity filled with blood and lochia, either pure or mixed with inflammatory products.

Others think it is useless to put in stitches, because the womb contracts, whereby the stitches get loose. I cannot share this view. When the womb contracts, its walls get thicker, and I think there would be more danger of the sutures cutting through than of their becoming too slack. It is true that by involution the whole bulk of the uterus and also the thickness of the wall is reduced, but this process is due to fatty degeneration of the muscular fibres and absorption of the liquefied tissue, and before it advances to any appreciable degree union may have taken place. Microscopical examination in my case showed that although the patient lived till the third day, the fatty degeneration had not yet begun, and in the mean time the edges had become agglutinated by the production of new-formed cells.

Spencer Wells, who many years ago urged the advisability of comprising the peritoneum in the suture after ovariectomy, has of late<sup>1</sup> likewise insisted upon the importance, after removing uterine tumors, of bringing the peritoneal edges of the uterine wall carefully together by many interrupted sutures or by an uninterrupted suture along the whole extent of the wound.

The advantages of the suture on the uterus after Cesarean section are still greater than after the removal of tumors from

<sup>1</sup> British Med. Journ., June 11th, 1881.

its wall. It is not only a most excellent hemostatic, and secures the normal condition that every part has a peritoneal covering, but it prevents the incarceration of intestines, and is of great importance in reference to later pregnancies. When no suture is applied, even in successful cases, the wound has been found united to a slight extent only, leaving a thin cicatrix with insufficient power of resistance, and consequently apt to rupture in a following labor. By the suture we have much greater chance of obtaining a linear cicatrix, by which the strength of the uterus remains unimpaired. In my case the outer two-thirds were united, and had the patient lived longer, the inner layer would doubtless likewise have become united.

Sometimes the suture is not only advantageous, but indispensable. Thus in a case of Dr. Brickell there had not been any uterine contraction for ten days, and the severe hemorrhage was only controlled by the use of sutures.

Something similar applies to cases like mine and Dr. Lungren's first,<sup>1</sup> where the edges do not come together, but gape. The edges were bevelled, so as to be much farther separated from one another in the outer layers than in the deeper ones. I do not know how common this gaping is, but I should expect it to be the rule. It would seem that both retraction and contraction must lead to such a result. The retraction being due to elasticity, it must be greatest in the outer parts of the womb, which are stretched over the inner parts, and consequently the edges will become bevelled exactly as when we make an incision in a rubber ball. Contraction, on the other hand, can only close the wound by means of those fibres which have not been incised, the others will have a quite opposite effect, and tend to separate the lips of the wound.

In no country has the uterine suture been more steadily used than in America, and there is scarcely a doubt that this has contributed more than anything else to bring about the comparatively excellent results pointed out by Dr. Harris. It is characteristic both of the practical sense of American surgeons and of the deference which American gynecology now enjoys abroad, that Säger<sup>2</sup> gives a list of no less than twenty-four

<sup>1</sup> Lungren, l. c., p. 80.

<sup>2</sup> Kaiserschnitt, pp. 86-89, and Archiv für Gynäkologie, 1882, vol. xix., No. 3, p. 397.

cases of Cesarean section performed with uterine suture in the United States, between 1852 and 1880. Nine of the women recovered.

In this list is comprised every reported case in which sutures were used, even those in which only a single stitch was put in, and yet the number of stitches is of great importance. Who would think of bringing the abdominal wound or any other wound measuring five or six inches, together with a single stitch? And is there less reason to stitch the uterine wound up with care? Quite the contrary. We have to deal with a muscular organ subject to constant changes in dimensions and position, and lined with a tissue destined to destruction, and bathed in a fluid which, even in perfectly normal confinements, according to experiments by Kehrer, produces fever when introduced through a wound on the woman herself, or on animals. This organ is situated in a cavity whose lining membrane is eminently liable to inflammation, and from which absorption goes on with the greatest ease and rapidity. Finally, this organ is liable to sustain great and sudden pressure, alternating with relaxation, during the act of vomiting, which is so common a sequel to the administration of anesthetics, that some surgeons, in order to avoid it after Cesarean section, have limited themselves to local anesthesia of the skin by means of Richardson's spray, or even discarded anesthetics altogether.<sup>1</sup>

Simon Thomas, of Leyden, was the first who used a comparatively large number of sutures, namely, eight silver sutures.<sup>2</sup> Commonly, only from one to twelve stitches have been introduced. In my case, I put in twenty-four, and the post-mortem showed union by the first intention, and no trace, even by microscopical examination, of inflammation, and that in spite of constant vomiting.

I think that the womb, on account of the above-mentioned conditions, ought to be united with even a greater number of stitches than external wounds. The number is still increased by the necessity of using *both deep and superficial sutures*. Two indications are to be met—one is, to get as deep and narrow

<sup>1</sup>B. Johnen has performed five Cesarean sections without using anesthetics, in order to avoid vomiting and hemorrhage. He says that only the incision and suturing of the skin gave any pain. (Centralbl. f. Gynäk., 1882, vol. vi., No. 40, p. 689.)

<sup>2</sup>Säuger, Archiv f. Gynäk., vol. xix., p. 390.



union of the muscular wall as possible, the other, to obtain union of the peritoneum. The peritoneal union takes place much quicker than the other, if the *serous surfaces are brought in contact*. This can be done, to a certain extent, as I did it, by putting in a large number of superficial sutures only comprising the peritoneum, and introduced at a short distance from the edge. When the suture is tightened, the peritoneum slides somewhat on the underlying muscular tissue, and its own elasticity allows a further approach of the points of entrance and exit of the sutures, and, by helping a little with two tenacula, an assistant brings the two serous surfaces in apposition. This "symperitoneal" or "sero-serous" suture, which is an imitation of the suture applied to wounded intestines, was first used in 1862, by Martino d'Avanzo.<sup>1</sup>

In order to obtain union both of the peritoneum and the muscles, two modifications have been proposed and tried with success. Kehrer<sup>2</sup> put in six sutures of carbolized silk through the whole thickness of the uterine wall. After having tied them, he incised the peritoneum, just outside of the sutures, dissected it off to the distance of one centimetre all around, and united these peritoneal flaps over the wound by twelve sutures of carbolized silk. He does not mention that he brought them together so as to apply serous surface to serous surface, and the flaps will scarcely have been sufficiently long and movable to allow such adaptation to any great extent. This method, although the patient recovered, seems open to several objections. The peritoneum is exposed to considerable strain by being brought together over the first row of sutures. The raw surface of the peritoneal flaps is brought in contact with the serous surface of the piece of peritoneum left round the wound, and such surfaces of different nature do not grow together as easily as homogeneous surfaces. Finally, secretion may collect between the flaps and the wound, and impede union. Kehrer must have found some difficulty in the operation himself, for in his second case he did not form any peritoneal flaps, nor put in this two-story suture, but simply used ten deep sutures through the muscular tissue, and twenty-five superficial through the peritoneum and the nearest layer of muscular fibres.<sup>3</sup>

<sup>1</sup> Säger : Kaiserschnitt, p. 136.

<sup>2</sup> L. c., p. 190.

<sup>3</sup> L. c., pp. 196 and 205.

Sänger<sup>1</sup> has proposed another way to deal with the peritoneum, by which we obtain large flaps which are applied against one another with their serous surfaces without causing any strain on that delicate membrane. This object is attained by his *subperitoneal muscular excision*, which was used by Leopold<sup>2</sup> in a case which had a good result for mother and child. Before suturing the uterus, the peritoneum, with an adherent layer of muscular tissue one millimetre thick, was dissected from the

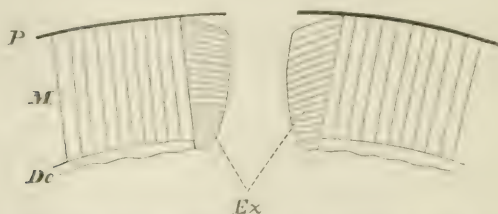


FIG. 1.—P, peritoneum, partly dissected off: M, muscular tissue; De, decidua; Ex, part of muscular tissue and decidua to be removed.

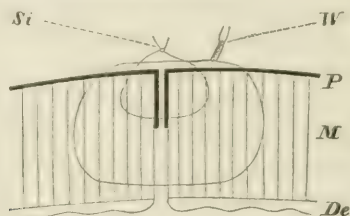


FIG. 2.—P, peritoneum, with flaps folded in: M, muscular tissue; De, decidua; W, deep wire suture; Si, superficial silk suture.

underlying tissue to the extent of one centimetre from the edge of the wound. Next he removed, with a pointed bistoury, a slice of muscular tissue from either side from angle to angle, and through the whole thickness of the wall. He likens them to wedge-shaped slices cut out of a melon, the base being formed by the muscular tissue denuded by the dissection of the peritoneum, and the edge being covered by a narrow strip of decidua. After that, the peritoneal flaps were pulled down over the new-formed surfaces, and the edges brought

<sup>1</sup> Kaiserschnitt, p. 160.

<sup>2</sup> Leopold, in Archiv für Gynäkol., 1882, vol. xix., No. 3, p. 404.

together with eight silver sutures comprising the peritoneum and the muscularis, but leaving the decidua free. Finally, twelve superficial sutures of carbolized silk were introduced through the peritoneum and the superficial part of the muscular tissue so as to penetrate the peritoneal flaps near their inner border (see Figs. 1 and 2).

Since this was written, Beumer (*Archiv für Gynäkologie*, vol. xx., No. 3, p. 409, *seq.*) has performed Cesarean section with Säger's excision. He found it very easy, and could separate the peritoneum from the muscular tissue with the handle of a scalpel. The patient died thirty-six hours after the operation. The autopsy revealed a thrombus in the longitudinal sinus, hypostatic pneumonia, extensive destruction of both kidneys by pyelo-nephritis, and beginning peritonitis. The uterine wound was found closed, and the sutures intact.

Säger<sup>1</sup> admits himself that the excision of muscular tissue is superfluous if the uterus is flaccid, or if in a contracted uterus the cut surfaces are parallel, and the two portions of the serous membrane can be drawn together and applied one against the other without dissection. But under the opposite conditions, it is doubtless a valuable suggestion, and the recommendation of the operators who have tried it in practice speaks in favor of it. It would seem to be of still greater importance in the treatment of the pedicle after the removal of tumors from the uterus by laparotomy than in Cesarean section; for here we have only to deal with a single rectilinear incision, and, as a rule, the surfaces will therefore fit one another exactly when they are brought into contact, while in the amputation of parts of the uterus surfaces are brought in contact which before had other relations.

<sup>1</sup> Kaiserschnitt, p. 162.



## CORRESPONDENCE.

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### BATTEY'S OR TAIT'S OPERATION?

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TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

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DETROIT, March 18th, 1883.

DEAR SIR:—In the March number of this JOURNAL is an article by me on “Three Cases of Battey’s Operation.” This article has been in your hands for more than six months, and was written some time before that. When I wrote the paper, I was not aware of “Tait’s operation,” and always considered that Battey’s operation consisted not only in the removal of the ovaries, but also of the Fallopian tubes or any diseased tissues which might be found. I shall be most happy to be corrected. If “Battey’s operation” consists *only* in removal of the ovaries, and “Tait’s operation” in removal of the uterine appendages, I will have to re-christen my article.

In reference to my last case, I will add that I received a letter, dated Dec. 20th, 1882, from Dr. De Vore, wherein he states that “Mrs. P. has not had the least sign of pain nor convulsion since the operation, and now considers herself one of the healthiest women in Ionia County,” and he also adds that “this is a striking illustration of the benefits which may be derived from an operation of this kind, presupposing a correct diagnosis, of course.” Now, Mr. Editor, I should be much pleased if you will publish and answer this little note. Yours, J. H. CARSTENS.

[ANSWER: Battey’s operation consisted originally of the removal of the ovaries alone, either in a healthy or but slightly diseased condition. Subsequently, Tait claimed that the tubes also should be removed, since on them depended the occurrence and persistence of the menstrual flow. Hence Tait, and probably most operators, now remove both the ovaries and tubes, when operating to produce the menopause, and the tubes in such cases need not be diseased. This is “Battey’s operation” as now universally practised.

“Tait’s operation,” however, consists in the removal of the *diseased* tubes (usually distended by pus or serum), together with the ovaries, which in their turn need not be diseased. The main object is to remove the diseased tubes, which give rise to the symptoms requiring treatment; the ovaries are usually also removed,

in order to check the regular monthly pelvic hyperemia with its resulting exacerbation of pelvic peritonitis and cellulitis. Tait's operation is still in its infancy, at least with all gynecologists except its originator. Could a positive diagnosis be made of the enlarged tube by bimanual palpation, the operation would soon become popular and beneficial.—ED.]

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TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

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I HAVE a case with the following history. Will some one advise treatment? An unmarried lady, thirty-two years old; black hair, blue eyes; one hundred and eighty-two pounds weight; five feet and two inches high; general health good; occupation, school-teacher; lives in the country; habits regular; disposition amiable, firm, and decided, but reasonable and considerate; good judgment; in childhood practised masturbation, but left it off fifteen years ago, about which time she began to have a "terrible sensation," which is not a pain or smart, but something like a shock as of ice thrust against the clitoris; it is absent nights and during menstruation, except the parts be touched. Had cauterization applied from the time she was seventeen till twenty-one years of age, every week so severe as to necessitate the use of anesthetics. She recovered, and was free from the trouble eleven years, but during this time had smarting after urination about urethra, which so increased till about a year ago, the old trouble brought her to me. I found, on examination per speculum, slight anteversion, with enlargement and engorgement of the uterus and appendages. These troubles have been treated locally and to some extent relieved, but the "terrible sensation" is not improved; she is nervous and cries; says she shall be insane; begs to have clitoris extirpated; worries, but sleeps well. Have given the bromides, iodoform, and phosphates; used electricity, faradic and galvanic, local and general, with no apparent improvement.

SARAH H. MORRIS, M.D.

LOCKPORT, N. Y.

[ANSWER: Marriage.—ED.]

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

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*Meeting, January 16th, 1883.*

### ANTE-PARTUM HEMORRHAGE.

DR. HANKS narrated the following cases which he had seen in consultation some time before: The first case was that of a multipara, about thirty-three years of age, who, at 4 P.M. one day during the ninth month of pregnancy, was taken suddenly, without apparent cause, with profuse hemorrhage. Dr. Hanks was called at nine o'clock in the evening. Her physician had been unable to check the hemorrhage, which had continued with occasional intermissions up to that hour. Believing that he heard pulsation of the fetal heart, Dr. Hanks suggested immediate delivery. Ether was administered, the cervix was quickly dilated, by means of his own egg-shaped, hard-rubber dilators, not more than five minutes being occupied, the forceps were applied to the head, and delivery of a full-sized living child was soon effected. The woman had no further hemorrhage after delivery, and rallied slightly, but died after twenty minutes. The placenta was expelled naturally. On examination, some indications were found which showed that there might have been a slight separation of the placenta from its attachment. But they were not positive. In no other way could he account for the hemorrhage. The case was of interest: 1. Because a living child was extracted after an alarming and, as it proved to the mother, fatal hemorrhage. 2. Because it illustrated the advantage of the egg-shaped hard-rubber dilators in cases where a little time might be all-important to both mother and child.

The second case was that of a woman who at the fifth month had profuse hemorrhage, which her physician attributed to placenta previa. Hemorrhage occurred again at the ninth month, when the patient was in labor. Dr. Hanks, being called in consultation, found the cervix considerably dilated and filled by the placenta, which was easily detached from the border of the cervix with the hand. A little chloroform was administered, and extraction by the feet was readily effected. The child lived, and the mother, who had been nearly exsanguinated, also made a very rapid recovery. Dr. Hanks accepted the suggestion made by Dr. Mundé, that it was better to class the second case among those of placenta previa than among those of so-called ante-partum hemorrhage.

### OVARIAN CYSTOMA TREATED BY PARTIAL REMOVAL AND DRAINAGE.

DR. JAMES B. HUNTER related a case, which was that of an unmarried woman, twenty-three years of age, who was supposed to



be suffering from an ovarian tumor dating back four or five years. The history presented no unusual features. On cutting down upon the tumor, on December 2d, 1882, it was found, much to his surprise, to be a cyst firmly adherent behind the uterus, and impossible to remove. About two-thirds of the tumor was then excised, some small tumors within the larger one were broken up with the hand, the cavity was cleaned, and the edges of the lower third of the sac were stitched to the abdominal wound, the upper part of which was treated according to the usual method. A hard-rubber drainage tube was introduced, and carbolized water was injected whenever there was any offensive odor. Peritonitis developing, rubber coils, through which cold water passed, were applied to the head and abdomen whenever the temperature rose much above 100° Fahr. The elevation of the temperature subsided at the end of a week, the discharge from within the sac ceased to be offensive, and the patient made a rapid recovery. Peat-bags, which seemed to answer a very good purpose, were employed afterward in dressing the wound. Dr. Hunter said, in reply to a question by the President, that peritonitis seemed to be due to the handling rather than to imperfect drainage. To a question by Dr. Chamberlain, whether any portion of the cavity of the tumor was closed by sutures separately from the abdominal wound, Dr. Hunter replied in the negative.

DR. LEE remarked, with reference to the method of treating the tumor as mentioned by Dr. Chamberlain, that he considered it unsafe. In a certain case in which he closed the lower portion of the sac separately with carbolized-silk ligatures, an abscess formed, free drainage was impracticable, and septic peritonitis developed. The abdominal wound was reopened, but the patient died.

DEATH FROM SEPTICEMIA AND PERITONITIS AFTER TRACHELOR-  
RHAPHY.

DR. P. F. MUNDÉ related a case as follows: Three or four weeks ago a woman entered Mount Sinai Hospital to be treated for laceration of the cervix uteri and for accompanying cystocele and proctocele. The uterus could be drawn down to the vulval outlet by the slightest traction and without producing any pain. The laceration was repaired without the administration of an anesthetic. The patient did not complain of much pain. After the operation, the temperature rose to 104° Fahr., but was reduced to 102° by the use of quinine and ice-water applications to the abdomen. Hot carbolized vaginal injections were given. The temperature then ranged from 101° to 103° for ten days. There was an offensive bloody discharge from the vagina. The sutures were not removed until the eighth day, when union was found to be perfect. The temperature remained between 101° and 102° for several days after the removal of the sutures, but the patient's condition was very low; she complained of no pain. Quinine, opium, and stimulants were administered, but death took place about the fourteenth day after the operation. The autopsy showed general peritonitis.

There had been no signs of peritonitis before the removal of the stitches, and Dr. Mundé thought the patient must have been suffering from septicemia. It was probable, in the light of the autopsy, that there must have been a gradual development of peritonitis from the uterine envelopes upward until it became general.

DR. HUNTER remarked, with regard to the cause of death in the case of the patient upon whom he had operated for laceration of the cervix, and to which Dr. Mundé had referred, that there was salpingitis, and it was supposed the tube had been ruptured, although an autopsy could not be obtained to demonstrate the fact. The uterine cavity was also curetted with a sharp curette at the time of the operation for repairing the cervix. About two years ago he closed a laceration of the cervix in a very healthy, strong woman, thirty-two years of age, inserting about ten sutures, and three days after the operation a local peritonitis developed, and the patient was very sick, but finally recovered. The sutures were removed three or four weeks after the operation, and union was found to be perfect.

DR. CHAMBERLAIN said that, the sutures having been removed on the eighth day, and perfect union found, septicemia from the wound seemed improbable.

DR. GARRIGUES thought it would be interesting, in the light of recent discussions in England upon the danger of the operation of trachelorrhaphy, to know how many deaths had occurred in connection with the operation in this country.

DR. BACHE MCE. EMMET remarked that the only fatal case which had occurred in the Woman's Hospital for a great many years was one in which the cause was directly traceable to exposure to a draught at the window.

#### DIAGNOSIS OF URETERITIS BY VAGINAL TOUCH.

DR. MUNDÉ narrated this case, which was interesting specially with regard to diagnosis. The patient presented herself last fall with symptoms of cystitis and pain on micturition. The urine contained pus, with bladder epithelium. A prescription of benzoate of sodium and triticum repens gave considerable relief. The patient complained every day for about a week of severe paroxysmal pain extending from the lumbar region on the left side toward the bladder. Considerable opium was required to relieve pain. Dr. Mundé made the diagnosis of possible renal calculi passing down the ureter, but thought it more likely a case of catarrhal inflammation of the ureter. These symptoms disappeared under treatment, and the amount of epithelium from the bladder greatly diminished under injections. About New Year's day Dr. Mundé was again called, and found the patient suffering from all the symptoms of acute indigestion, and about ten days later she again complained of pain in the left groin. Repeated vaginal examinations revealed no abnormal condition until January 11th, 1883, when, greatly to his surprise, he felt what appeared like a whipcord, of about the size of a goose-quill, running from the neighborhood of the base of the bladder upward and backward in the

direction of the vaginal pouch on the left side. It was exquisitely tender. The patient was still complaining of pain in the left groin. The urine showed ureteric epithelium and a less amount of vesical epithelium than formerly. Having never before felt the ureter through the vagina, Dr. Mundé asked Dr. Emmet to see the case. Dr. Emmet stated that it was the first instance of the kind which he had seen. They agreed in the diagnosis of ureteritis. Dr. Emmet expressed the opinion that there was vesico-vaginal cellulitis, that the serous exudation had pressed the thickened ureter downward, and, in order to confirm this view, suggested that the temperature be taken in this neighborhood per vaginam. The temperature was found to be 103.25° Fahr. It was not taken elsewhere, but it did not seem much elevated.

DR. GARRIGUES remarked that while he had never diagnosticated a swollen condition of the ureter by a vaginal examination, he should think it quite possible to do so in such a case as Dr. Mundé had described, in which the location of the cord which had been felt corresponded to the position which the ureter would naturally assume in that state. He then described the relations of the ureter to the pelvic organs as he had found them in recent anatomical investigations.

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*Meeting, February 6th, 1883.*

MODIFICATION OF FREUND'S OPERATION FOR REMOVAL OF THE UTERUS.

DR. W. G. WYLIE, by invitation, narrated a case as follows:

The patient, a woman sixty-five years of age, who had never borne children, was sent to him last summer suffering from uterine hemorrhage of about one year's duration. The menopause had been passed about nine years before. The patient was very nervous, but well nourished and apparently in good health. The hemorrhage of late had become more severe, and she suffered from neuralgic pain extending upward on the right side, in the neighborhood of the uterus. Upon physical examination, the vagina was found to be small, the cervix rather large, and the uterus three and a half inches in depth. Considerable hemorrhage followed the withdrawal of the sound. Slight dilatation was made, and the uterine cavity was curetted, bringing away quite a mass of broken-down tissue, which was not examined microscopically. The case was supposed to be one of so-called granulations of the lining membrane, or possibly of malignant disease. Hemorrhage ceased for two months after the curetting, and pain was relieved to some degree. The patient was then seen also by Dr. Sims, who believed that she was suffering simply from granular degeneration of the lining membrane of the uterus, and that Dr. Wylie had probably failed to remove all of the granulations at the former curetting. Dr. Wylie then dilated the cavity a second time, and curetted it thoroughly. Dr. Welch examined a piece of tissue, about the size of a pea, which had been removed, and pronounced it undoubted epithelioma. Pain and hemorrhage were again largely relieved



for about a month after the second operation. The patient consented to an operation for removal of the uterus about three weeks ago, and entered Bellevue Hospital. Dr. Lusk and Dr. Polk saw her in consultation with regard to whether it were best to remove the uterus through the vagina or through the abdominal wall. As the vagina was atrophied, and as it would be difficult, in operating by that method, to determine, as the operation proceeded, whether the tissues outside of the uterus were involved in the cancerous disease, Dr. Wylie decided to make the abdominal incision. Expecting to meet with considerable fat, and, on account of senile atrophy, with immobility, as the operation proceeded, it was thought impossible to carry out Freund's method perfectly, and the following procedure, which it was believed would require not more than half the time, was adopted. The incision extended from the umbilicus down nearly to the pubes. The uterus was moderately pressed against the abdominal wall by a Sims' repositior, introduced into the cavity, and held by an assistant. On account of the bulkiness of the fat and the distended intestines, it was necessary to lay the latter on the abdominal wall. The body of the uterus was then grasped with a strong forceps, and turned from side to side by another assistant as occasion required. By means of a simple curved needle in a holder held in the right hand, while the left served to receive the point of the needle and protect the intestines, etc., two ligatures were tied around the broad ligaments, one just outside of the ovary, dipping below the round ligament, and the other nearer the body of the uterus. Afterward a cork, fastened to the end of a stick, was passed up the vagina, and pressure was made in Douglas' cul-de-sac, lifting the uterus upward. A trocar was passed from above down through the tissues into the cork held firmly below in Douglas' cul-de-sac, and the end of the canula was brought out at the vulva. Beforehand, a long loop of very strong silk (soft wire would have been better) had been fixed in a hollow piece of hard rubber just the length of the vagina, so that the lower ends of the loop could be attached to an *écraseur*, and made to tighten the loop at the upper end of the tube where it came out of the tube on its anterior surface just below the end. By means of a small wire passed down through the canula of the trocar, this loop was drawn up through Douglas' cul-de-sac into the abdomen, and held by an assistant, while the broad ligaments were cut between the ligatures placed in them, and the bladder separated from the anterior wall of the uterus down to the vaginal junction. The loop was then passed over the body of the uterus and slipped down to the vagina below, while it was being tightened by the *écraseur*, worked by an assistant at the outlet of the vagina. At the same time, the uterus was held upward by strong forceps clasping the fundus. The object of this loop ligature was to ligate all vessels not included in the outside ligatures first put in the broad ligaments, and to grasp the upper end of the vagina just below the cervix, so that, when the whole uterus was enucleated, there would be no

bleeding points, and only three ligatures left. When the loop was tightened, the bleeding was entirely stopped. By means of curved scissors, the uterus was readily cut off just above the loop ligature. It was then discovered that a small part of the cervix had been included in the loop, and the uterus cut off just at the vaginal junction. There was no bleeding at this time; but in attempting to elevate the stump with a large pair of forceps, the loop ligature slipped up over the stump. It was withdrawn from the vagina, the cork plug put in and the stump pushed upward, and, the cork being quite large, the upper end of the vagina was put on the stretch and distended. While the stump was held up and steadily, by means of the same curved needle used on the broad ligaments, armed with a ligature and held in Sims' needle-forceps, two ligatures were passed on either side of the stump, dipping down into the vagina in close proximity to the cervix. After these were tied and the cavity cleansed, one bleeding point was found in the left broad ligament, a short distance from the ligature just tied. A third ligature was passed from before backward with the curved needle, and, when tied, all bleeding ceased. The cork plug held by the assistant pushing up the stump made the passing of the ligatures easy, and lessened very much the risk of including the ureters in the ligatures.

The uterus, upon examination, was found entirely free from cancer, except the lining of the body, which was pretty well covered by a growth that filled and somewhat distended the cavity, and the point of excision was full half an inch or more below the lowest part diseased. The small part of the atrophied cervix left as a stump was found perfectly healthy, and it was decided not to remove it. After waiting some time, to be sure that no points were bleeding, a drainage tube was put in and the wound was closed, and the operation completed in about one hour and forty-five minutes, with the patient in good condition. Three hours later she came out from the anesthetic, and had a good pulse of 96. She was clear mentally, and did perfectly well during the first twenty-six hours after the operation, the temperature not rising above 101° F., nor the pulse above 108. At the end of that time she became slightly delirious, picked at the bed-clothing, and complained of dryness of the throat; there was slight dilatation of the pupils, the respiration and the pulse became more rapid, and she died thirty-six hours after the operation. The patient, being addicted to the use of opium, received one hundred minims of Magendie's solution in the twenty-four hours, and, by mistake, also a twelfth of a grain of atropine in divided doses, which might in part account for certain of the symptoms, but Dr. Wylie could hardly believe it could have been the cause of death, nor was anything found at the post-mortem examination which would account for the fatal issue. Peritonitis was not apparent, and there had been no hemorrhage. Dr. Welch had examined the specimen, and pronounced it epithelioma.

DR. LUSK remarked that there was one important point connected with the case which Dr. Wylie had not mentioned, namely, that it was one of undoubted primary epithelioma of the uterus—a condition which some pathologists of large experience doubted ever existed. Freund found that by means of pressure with the colpeurynter for a week before the operation the uterus could be elevated even as high as the umbilicus. At the time of the operation the ordinary vaginal tampon was introduced, and, with the uterus thus lifted above the brim of the pelvis, one of the difficulties of extirpation was removed.

DR. WYLIE said he could fully appreciate the advantage of the procedure, and, while he had not then heard of its being practised by Freund, he thought of resorting to tampons in the present case to render the uterus more movable, but she was so nervous that he decided not to do so. During the past few months he had several opportunities to observe how quickly and decidedly forcible traction upward on the uterus during operation was followed by shock, and he thought that this might be very much lessened, if not obviated, by getting the uterus accustomed to being forcibly elevated before operating.

DR. J. E. JANVRIN remarked that it was a difficult matter to apply the third ligature in the manner practised by Freund for controlling hemorrhage from the uterine arteries, whereas the method adopted by Dr. Wylie would seem to be very easy of application and quite efficacious. In a case in which he performed the operation he made use of the former method, and experienced considerable difficulty in carrying it out. In reply to a question by Dr. Lee, he said that his own patient died at the end of thirty-six hours.

DR. LEE remarked that he knew of no other case in New York in which the operation had not terminated fatally. The danger of a fatal issue in these cases was enhanced by the fact that, owing to the usual effects of malignant disease upon the general health, the patient was less able to withstand primary and secondary shock than where the operation was done for non-malignant disease.

The proper field for hysterectomy, as had been suggested by Dr. Polk at a previous meeting of the Society, seemed to him to be limited to such cases as sarcomatous growths, where the disease was confined to the uterus itself and was not in danger of recurring after the operation, and where the patient's general condition was not depraved from the constitutional effects of the disease, and was better able to withstand the dangers incident to the operation itself. The mortality attending Freund's operation, as reported by all surgeons except by the author himself, had been so great that American physicians had little confidence in it.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Stated meeting, Thursday, April 5th, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. W. GOODELL exhibited some

### CALCAREOUS PARTICLES PASSED PER VAGINAM.

The previous history had been that of menorrhagia, and multiple fibroids were found in the womb. One of these fibroids had evidently taken on calcareous degeneration and had subsequently broken down, and discharged these fragments into the uterine cavity. He stated that these particles were not true bone, but merely the product of a disorderly deposit of lime, which possessed none of the osseous elements, not even cartilage corpuscles. This calcareous degeneration tends to cure the disease by breaking off the vascular filaments of attachment and lessening the nutrition of the fibroid. In one instance, the specimen of which is now in the Museum of the University of Pennsylvania, he had seen three fibroids wholly converted into stone. These stones were, however, very light and not like those of the bladder. It was the expulsion *per vaginam* of these uterine calculi which had greatly puzzled the older anatomists.

DR. GOODELL also exhibited two calculi and related the following histories of two cases of

### STONE IN THE FEMALE BLADDER ASSOCIATED WITH FISTULOUS CONNECTION WITH THE BOWELS.

The first case was that of a patient of Dr. C. A. McCall who sent her to him in October, 1881. For the preceding four years she had suffered very much from vesical tenesmus. She frequently broke wind *per urethram*, and often passed through the same channel the seeds of raspberries, of tomatoes, and of pears. A year before Dr. Goodell saw her, she had voided a great deal of her urine *per rectum* for several weeks. Dr. Goodell detected two stones in the bladder and removed them. At once all the symptoms of fistulous connection between the bladder and the bowels disappeared and the patient got well. This rapid recovery led him to think that there had not existed any fecal fistula, but that the vesical tenesmus was so great as to cause a rectal tenesmus which was masked by the former, and that the seeds and wind were voided *per rectum* unconsciously by the woman when attempting to empty the bladder. But he had been led to change his views by the following case which he had seen with Dr. William Corson and which Dr. Ellwood Corson was kind enough to report for him. Misled by the

first case, Dr. Goodell was not at first disposed to admit the existence of a fecal fistula, but from the subsequent history of the case there can be no doubt of it. In this case he believed that a pelvic abscess had burst into the bladder and also into the rectum or small intestines, which had established the communication between the two viscera. Like the first case, as soon as the calculus was removed the fistulous tract closed and the patient got well.

"Mrs. R., American, aged fifty years, the mother of five children. For three or four years prior to Nov., 1881, she was troubled occasionally by the passage of small calculi, but her health was reasonably good, with the exception of backache and an almost constant pain in the right iliac region. She often expressed her belief that there was something growing in the right side. There was no tumefaction in that region and her opinion was based on the pain and distress she felt. She never applied to her physician for relief of this suffering. She was also troubled with constipation. In Nov., 1881, she made a visit to the country and took a long walk. On her return home she had a constant desire to urinate and she then noticed, for the first time, that her urine had an unnatural color and a very unpleasant odor. The quantity passed was not excessive. This condition continued for five or six days when there occurred a sudden gush, from the bladder, of a very offensive mixture of pus and urine, accompanied by great pain and straining. Her pain and distress became so great and was so augmented by being on her feet that she was compelled to remain in bed." After the free discharge occurred, the pain in the right iliac region ceased, and she has never had any return of it. As she was troubled with constipation, she was directed to eat stewed prunes and she soon noticed that the prune skins came from the bladder, as did other articles of food, along with the urine. Every day she was troubled with the escape of gas through the urethra, and this gave her as much pain as the passage of solid matter. She says that she occasionally passed urine through the rectum. She became greatly emaciated and was but partially relieved of her suffering by the constant use of morphia. Until Jan. 20th, 1882, she was under the care of homeopathic physicians. On that date Dr. Wm. Corson was called to the case. Feb. 10th, Dr. Wm. Goodell saw her and diagnosticated stone in the bladder. Feb. 20th, she was etherized and the urethra dilated and a digital examination proved the existence of a calculus, about three-fourths of an inch in diameter, attached to the fundus of the bladder. This was removed by Dr. Ellwood Corson. In attempting to dislodge the calculus, it crumbled on slight pressure with the extracting forceps and proved to be a mass of fecal matter with a calcareous crust but slightly thicker than an egg-shell. While she was under the influence of the anesthetic, an attempt was made to wash out the bladder, but after injecting fl. ʒ xij. of water and finding that it escaped into the interior of the body and did not remain in the bladder, the washing-out process was discontinued. After she re-

gained partial consciousness and made a strong straining effort, the injection came away through the urethra. As there were some doubts expressed as to the possibility of there being an opening from the bowels to the bladder, she was induced to eat a few stewed figs and the seeds were *seen* to come from the urethra; on another occasion, fl.  $\frac{5}{8}$  viij. of carmine-colored water was injected into the rectum and was immediately drawn from the bladder by means of a catheter. After the removal of the calculus, it was thought proper to keep the bladder washed out daily with warm injections, and to regulate the bowels with mild aperients, but after persisting in this course of treatment for four days, it was abandoned as it caused her great discomfort and did not improve her condition. Afterward she was allowed to eat such food as the system craved, care being taken to select such articles as would not leave an irritating residuum. She rapidly improved and since April, 1882, has had no trouble with her bladder. If she eats acid fruits or drinks lemonade she has some irritation in passing urine. That there was a fistulous opening from the bladder to the rectum, there can be no doubt; and when we take into consideration the fact of an abscess forming somewhere in the right iliac region and opening into the bladder, and that the food passed from the bladder in a semi-digested state and with the absence of a fecal odor, there is a strong probability that there was also an opening from the small intestines into the bladder.

DR. J. C. MORRIS had seen two cases of pelvic abscess bursting into the bladder. One case was in the person of a night-nurse at the Episcopal Hospital. A tumor in the lower part of the abdomen first attracted attention. The uterus was drawn up out of reach of the finger when making a vaginal examination; an inflammatory mass could be felt between the uterus and bladder; every half-hour a mixture of urine and pus was voided *per urethram*. If a catheter was passed into the bladder and turned to the right, urine escaped through it, but if it was passed to the left, nearly pure pus passed through it. Examination with the sound showed a large fibroid in the anterior wall of the uterus. This tumor having undergone purulent degeneration and a fistulous opening being established, the pus escaped through the bladder. A galvanic stem pessary five and a half inches long was introduced into the uterus and was finally successful in effecting its reduction to the normal size. This woman died of fibroid phthisis, and, at the post-mortem examination, the uterus was found but slightly enlarged and the fistula into the bladder was not seen, but a communication from the small intestine into the bladder was discovered.

DR. WM. H. PARISH had seen one case of fistulous communication between the bladder, vagina, and small intestine, resulting from an attempted abortion and consequent cellulitis. After long-continued pelvic symptoms, food commenced to pass through the bladder and the anterior and upper portion of the vagina. Water injected into the vagina passed into the bladder, but a sound could not be made to follow it. The food which passed through the fistulæ was incompletely digested.



DR. ELLIOTT RICHARDSON read a

REPORT ON RESULTS OF POST-MORTEM EXAMINATION OF THE BODY OF  
LINA EARL.

This woman was operated upon September 22d, 1880, for removal of a living child from the uterus by Cesarean section, as modified by Porro and Müller. A report of the case was published in *Amer. Jour. of Med. Sci.*, January, 1881. The immediate results of the operation were in every way favorable. The child was living, and the mother made a speedy recovery. She died in New York City, on February 24th, 1883, two years and five months after the operation. She had been, for two years previous to her death, at times an invalid, and was under my care occasionally for the treatment of attacks of acute rheumatism, anemia, etc., to which her life of hardship and exposure as an exhibiting curiosity rendered her peculiarly liable. The more recent symptoms which appeared during the last illness I did not witness, but learned that they were attributable to defective action of the kidneys.

At the post-mortem examination, made about nine o'clock P.M., on February 24th, ten hours after death, there were present Drs. Satterthwaite and Hegeman, of New York, and myself.

Inspection of the body showed the long bones of the extremities to be deformed as in rachitis; deformities which had not been so apparent during life. General anasarca was present. On the surface of the abdomen a cicatrix was observed extending from a point about one and a half-inches above the umbilicus to within about three quarters of an inch of the symphysis pubis. This cicatrix was the remains of the abdominal incision made at the time of the operation for her delivery, and occupied the linea alba directly in the median line; except that at the umbilicus it was deflected to the left. Nearly the whole of that portion of the cicatrix extending between the symphysis pubis and the umbilicus was the site of a large hernia, which, however, did not extend into the latter. This hernia I had seen during the patient's life. It began to appear about six months after the operation, and received no treatment whatever until by its size it became inconvenient; then a bandage or truss was applied, and this she wore constantly until her death. The production and enlargement of the hernia had been greatly favored by the woman's course of life as an exhibitor of herself and child, for the latter she lifted up and held in her arms many times a day, in order to display it to her visitors, even after it had become much too heavy for her to carry.

The body was opened by a long incision from the top of the sternum to the symphysis pubis. This incision was deflected to one side opposite the cicatrix of the old abdominal wound, in order that the relations of this to the abdominal contents might be more closely observed. The body, as before stated, was anasarcaous throughout. Some clear serous fluid was found in the peritoneal cavity, and a good deal in the cavities of the pleuræ and the peri-

cardial sac. I very much regret that I have no data of microscopic appearance of any internal organ or tissue to give. Only the gross lesions which could be detected by the unaided eye in a hasty examination can be given. The heart was not opened, but the left ventricle appeared abnormally large. The lungs were edematous, and pneumonia of the right side was observed. The spleen was enlarged. The liver<sup>d</sup> presented an appearance of fibrous or "hob-nail" degeneration. The kidneys showed unmistakably the existence of Bright's disease. The abdominal and pelvic cavities gave no evidence of any peritoneal or cellular disease. The hernia was found to be covered by peritoneum and skin; the remaining structures having parted to admit the protrusion of the intestines and peritoneal covering. No adhesions between the cicatrix and subjacent structures could be detected, except at the lower angle of the wound. It was at this point that the stump of the uterus had been fixed in a manner similar to the disposal of the pedicle in ovariectomy. A fibrous band was found extending from a depression in the abdominal wall at this point to a body consisting of the remains of the uterus.

Dr. Satterthwaite, who examined these specimens, writes me that this body, which occupied nearly the normal position of the cervix uteri, except that it was displaced somewhat anteriorly, presented the following characteristics: "The extreme length of the stump was 4.75 cms. (1.87 inches); vertical thickness, 2.5 cms. (1 inch); its breadth, 1.5 cms. ( $\frac{1}{2}$  inch). On attempting to pass a uterine probe into the os externum, it was found to enter with difficulty, though the cervical canal was capable of admitting a No. 10 (English) sound. The mucous membrane was coated with a deposit of white, thick, gelatinous material, and was intact for a distance of 3.5 cms. ( $1\frac{1}{4}$  inches). No naked-eye evidences of cicatricial tissue were made out at the amputated extremity of the neck."

Examination of the pelvis *in situ* was of much interest to me. Measurement of the superior strait gave for the

Conjugate diameter	2 inches exactly.
Transverse "	$4\frac{1}{4}$ "
Oblique "	$4\frac{3}{8}$ "

The pelvis was a rachitic one, although the pavilion did not present the wide-spreading alæ or the diverging anterior-superior spinous processes of the ilia, which are the usual deformities of rachitis in this part of the pelvis. The true pelvis, however, presented highly characteristic deformities. The sacrum was at its upper part dislocated and pressed downward and forward into the pelvic cavity, while the lower extremity, being held by ligaments to the ischiæ and pubic bones, caused a sharp bending forward of its last three vertebræ. This deformity implied abnormal softness and pliability of the bone at a time when the individual was of sufficient age to either stand or sit erect, so that it alone is conclusive evidence of rachitis having existed. The

normal curvature of the pubic bones was nearly lost, so that they receded from the symphysis in nearly straight lines backward and outward to join the ischiæ and iliæ. The two pubic bones, when viewed from above, formed an abnormal angle at the symphysis. The shape of the superior strait was therefore obtusely cordate, deeply indented at its base by the promontory of the sacrum projecting far into it. I was much surprised at the evidences of rachitis, which became more and more conclusive as the examination proceeded, since the history of the patient formally given me was that of excellent health from birth to the time of the operation in 1880, and we were told by the woman and those who had known her best in early life that she was in her figure an almost exact counterpart of her father. These facts—as I supposed them to be—led me to believe that her shape was due to arrested growth and not to rachitis.

It will be of interest to know that the child of this woman is now living, that he is well developed, and presents no deformity nor any symptom of rachitis. He is of fair size for his age.

In closing, I would draw the following conclusions from the examination:

1st. That the deformity of pelvis and extremities was due to rachitis.

2d. That the operation had nothing to do with the patient's death.

3d. That the operation caused the patient no inconvenience, except from the hernia, which would either not have become developed, or at most would have been small, had it not been for the exposure of the woman to unusual strain, and her total neglect to resort to any treatment, until the hernia became large.

4th. That success, in so far as the woman was concerned, would have been possible, and even probable with diameters so large, if embryotomy had been resorted to in this case; but the operation would still have been dangerous, and the child would necessarily have perished.

DR. R. P. HARRIS remarked that of five Porro operations in this country, four have been fatal. This is the first successful operation in which a post-mortem examination has been obtained after entire recovery.

In reply to Dr. A. H. Smith, DR. RICHARDSON stated that no trace of a fistulous opening between the stump of the uterus and the abdominal wall existed at the time of death.

DR. B. F. BAER read the history of a case of

#### SUPPURATING CYST OF THE BROAD LIGAMENT WHICH HAD PERFORATED THE BLADDER,

and exhibited the specimens removed by laparotomy. (The case will be published entire in the *AMERICAN JOURNAL OF OBSTETRICS*.) The characteristic points were chills, exhaustion, anorexia, tenderness throughout the lower abdomen, and a small, painful tumor in



the left iliac region, with great irritability of the bladder. Pulse, 120; temperature, 100° to 102°. The tumor extended down between the bladder and uterus, and the latter was retroverted. Douglas' *cul-de-sac* was occupied by a thin-walled fluctuating cyst about the size of a large orange. The uterus could be moved slightly from side to side. The anterior tumor rested on the bladder, and was adherent to it. The history showed a slowly growing cyst with purulent contents, commencing about three years before, when the first chills and a mild septicemic fever had occurred. Gradual emaciation had been progressive since that time. Tympanitic resonance of the tumor gave evidence of decomposition with evolution of gas. When the catheter was passed before operating, several ounces of very fetid pus flowed through it, showing a spontaneous rupture of the cyst into the bladder. The cyst was found adherent to the abdominal wall and to the bladder, but not to the intestines nor uterus. The cyst was aspirated and removed by laparotomy. The pedicle, consisting of broad ligament and Fallopian tube, to which the left ovary was adherent, was transfixed and ligated. The cyst in Douglas' pouch arose from the opposite broad ligament; it had formed no adhesions, and was removed without evacuation of its contents. The ovary and Fallopian tube were healthy, and were not removed. The aperture in the bladder, through which the contents of the cyst had escaped, was valvular, and was closed by the compression furnished by the external dressings. The patient died from exhaustion soon after the close of the operation. Dr. Baer introduced cases from W. L. Atlee, Peaslee, Keith, Geo. F. French, and Goodell to prove the correctness of the principles upon which he operated.

DR. W. H. PARISH thought Dr. Baer's rules safe and sound; he had removed a suppurating cyst with anterior adhesions. An experienced operator who was present recommended delay, but feeling sure of the correctness of his own principles, he removed the cyst, and the patient recovered. In another case in which a fistulous opening discharging pus existed, suppurative peritonitis was diagnosticated, but after death from septicemia a post-mortem examination revealed a suppurating cyst of the ovary.

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## TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

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*Stated Meeting, held February 16th, 1883.*

DR. S. C. BUSEY, *President, in the Chair.*

DR. H. D. FRY read a paper on

THE ETIOLOGY AND PROPHYLAXIS OF PUERPERAL ECLAMPSIA.

After giving a history of the subject and the various theories set forth to elucidate it, Dr. Fry summed up his views as follows:

1st. Puerperal albuminuria is the symptom of a pathological change, or of pathological changes, indicative of a predisposition to eclampsia.

2d. The prophylactic treatment of eclampsia therefore includes measures adopted to prevent the occurrence of albuminuria. These are to improve the condition of the blood by the administration of tonics, iron, and a liberal dietary; and to relieve the renal congestion by attention to the functions of the skin, and by prohibiting the wearing of tight clothing.

3d. The urine of all pregnant women should be examined for albumen after the sixth month of gestation, and earlier if any suspicions are entertained of renal complication.

4th. With the recognition of the disease treatment should be directed to its relief. This is divided into general, dietetic, medicinal, and

5th. Obstetrical, to which are referred the graver cases of the affection which, not yielding to treatment, demand, by the urgency of their symptoms, prompt operative interference.

DR. C. E. HAGNER, in opening the discussion, said Dr. Fry had seemed to limit his paper to eclampsia when albuminuria was present. The actual cause of this disease is still *sub judice*. The real cause of the convulsions was for a long time said to be uremia, but the best authorities now call it urinemia. Other causes are given, as excessive plethora, a dead child acting as an irritant, a neurotic tendency, pressure upon the sciatic nerve. Increased arterial pressure is a consecutive condition. The normal hypertrophy of the heart during pregnancy might be its cause.

In regard to its prevention, Dr. Fry had said all that was necessary. It was astonishing how many of the older authorities were opposed to obstetrical interference. The President of this Society, in a monograph on this subject, had advocated the induction of premature labor, and such, in the speaker's opinion, was the proper course to be pursued. He would even go so far as to say that if the child had not gone to full term, hydremia existing and convulsions seemed to threaten, he would induce labor. He had heard a professor of obstetrics in Philadelphia tell his class that he had no hesitancy in inducing labor in such cases during the last months, and he believed the time would come when fashionable women would have their children at any time that suited their convenience during the last four weeks of pregnancy. Dr. Hagner cited a case in his own practice where, without the slightest history of albuminuria or premonition, his patient was suddenly taken with convulsions, and although he delivered her of a putrid child, whose death had not been suspected, she died in a few hours. He considered the tendency nowadays to be for the induction of labor, certainly when the child was viable, and, if necessary, even in the early months of pregnancy.

DR. J. T. JOHNSON said the great point was to prevent, if possible, the occurrence of the convulsions. He had seen cases where he thought that calamity might have been averted. The patients had a history of swollen feet, obscurity of vision, and other symptoms indicative of albuminuria. Prompt treatment might in some cases have prevented the subsequent convulsions. Where long-continued coma was the result of the first convulsion, he had rarely seen the

patient recover. An apoplectic condition seemed to be the result. In his efforts to relieve the convulsions he thought he had delivered some cases with too much haste, as the irritation of the uterus seemed to induce a recurrence of the convulsions. He thought the obstetric management of these cases needed revision. Many cases were delivered too hastily.

DR. W. W. JOHNSTON was pleased to hear Dr. Fry speak of the intimate nervous connection between the uterus and the kidneys. He related the case of a non-pregnant woman with albuminuria whose urine was examined daily for months. At every menstrual period four or five times as much albumen would be found as was present during the intervals. In women who had borne children, the presence of albumen in the urine was not the precursor of convulsions, to the same extent, at least, as in primiparæ. In the latter it was almost certainly the antecedent symptom of eclampsia. He had found, too, that convulsions would frequently set in before the os was dilated.

Sufficient attention was not paid to climatic influence in the treatment of albuminuria. The patients should be kept in an equable temperature. If necessary, they should be sent to dry and warm climates. Dietetic measures, also, were of great weight. The exclusive milk diet had proved of great benefit in many cases. In milk, however, there was relatively too little albumen and too much fat. But skimmed milk, by diminishing the amount of fat, obviates this difficulty, and does not seem to cause "biliousness" and distaste. His father had noticed the beneficial effects from the use of large doses of bromide of potassium in the albuminuria of pregnancy. An objection to the too free use of hot baths and diaphoretics is that they diminish the flow of urine. In the treatment of convulsions in labor, he had adopted the rule of putting the patient under an anesthetic, dilating the os and delivering as quickly as possible.

DR. S. S. ADAMS mentioned a case now under his treatment. The patient, a primipara aged twenty-four, when five months advanced in pregnancy, had considerable swelling of the feet, for which he ordered saline purgatives. The urine contained no albumen. When the time of expected confinement came on, the patient was complaining of cough, blindness, and great swelling of the whole body. She passed urine frequently, but in small quantity, which on examination proved to be about one-half albumen. Diffuse pulmonary edema was soon developed, which was considerably relieved by ext. jaborandi fld. in doses of one drachm. After labor the condition became critical. The kidneys ceased to act, and it was only by active stimulation, dry cups to the back and poultices with digitalis, that the patient was able to rally. She is now improving.

DR. FRY said that his paper merely spoke of prophylaxis, which the members seemed to overlook. He was glad the necessity of looking for albumen was spoken of, and thought it should be the routine practice of every physician to examine the urine of pregnant women. Bromide of potassium may act by dulling the nervous connection between the uterus and kidneys. One point to which he wished to direct attention was that the left utero-ovarian vein emptied into the left renal, a fact not spoken of in obstetrical text-books. Surgical writers recognized its influence in causing varicocele on that side.



TRANSACTIONS OF THE OBSTETRICAL  
SOCIETY OF EDINBURGH.

(A B S T R A C T.)

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Meeting, January 10th, 1883.PROFESSOR SIMPSON, *President, in the Chair.*

DR. J. HALLIDAY CROOM read a paper entitled:

SOME OBSERVATIONS ON THE BLADDER DURING THE EARLY  
PUERPERIUM.

After describing the relative positions and relations of the bladder and uterus, in the early puerperium, he proceeded to point out the influence which filling of the bladder exerted on the uterus. He drew attention to displacement of the uterus upwards and backwards, taking exception, however, to the term *displacement*, and showing that the word did not exactly convey a correct impression of what actually took place. He admitted that a certain limited ascension of the whole organ occurred, but that the real heightening of the fundus was the result of the bladder as it filled straightening the uterus and so throwing the fundus higher up, and that the backward displacement of the uterus resulted from the intestines falling down between the uterus and the anterior abdominal wall, rendering the organ thus less easily palpated. He drew attention to the experiments of Antefage and Depaul with the hystrometer, which supported the opinion that the alteration in the uterus was not a displacement of the entire organ but a real heightening of the fundus.

Reference was then made to the normal position of the uterus which the author showed was generally believed to be right-lateral; but from the observations made by Börner as well as from his own, he was inclined to believe that the normal situation of the uterus was central, provided always the bladder and rectum were completely empty and the patient flat upon her back. He then showed that the second effect of bladder-filling was to cause or increase this lateral deviation of the uterus and that the ordinarily accepted opinion as to the right deviation of the uterus with a full bladder was not borne out by his own observations.

He showed that the frequency of left lateral displacement of the uterus was much more common than was generally believed and he attributed this to the fact that the bladder distended naturally to the right side during the early puerperium, and that for two reasons: first, because of the natural right asymmetry of the bladder of the parous woman, and second, because of ante-partum conditions, namely, that during pregnancy the bladder spreads out

more to the right side than to the left, owing to the left occipito-anterior position of the head. The right deviation of the uterus he attributed to, first, the natural position of that organ during pregnancy, secondly, to the rectum, and thirdly, to the accident of position. The third effect of the distended bladder was to affect the rotation of the uterus, increasing the rotation where it already existed and in cases where the uterus was transverse with an empty bladder bringing it about. He drew attention to these displacements being more common in the early than the late puerperium, firstly, because of the relatively greater diuresis; secondly, because of the greater frequency of retention of urine, and, thirdly, because of the greater mobility of the uterus.

In conclusion, he alluded to some figures with regard to the amount of urine required to bring about these position changes, holding that, while twenty to thirty ounces of urine under certain circumstances cause these changes most markedly, these changes are not proportionately increased with double that quantity.

THE PRESIDENT remarked on the interest of the paper. One would require, however, to read it before criticising Dr. Croom's explanation of the changes in uterine position from bladder distention.

DR. D. BERRY HART thought that in explaining the changes in the uterine position from bladder distention, Dr. Croom would require to keep in mind the influence of the shape of the brim of the pelvis. So far as he had followed the paper, this factor, which Dr. Croom had omitted, seemed to him the most important one.

DR. A. D. L. NAPIER, Dunbar, then read a paper on

THE UMBILICAL CORD AROUND THE CHILD'S NECK AS A CAUSE OF  
DELAYED LABOR AND SOMETIMES OF INFANTILE DEATH.

Dr. Napier believed that, 1st, retraction of the fetal head during the pains, with sufficient uterine action and a roomy pelvis; 2d, gradual cessation or long abeyance of the pains, and, 3d, insufficient head-flexion, followed by over-rotation of the occiput, all pointed to coiling of the cord round the child's neck. The second factor above stated he believed to be the most important.

For diagnosis of this condition, when the head was in the pelvis, he held that it could be made out by digital examination when the pelvis was roomy. If he suspected its occurrence in the first stage, he would employ sedatives; in the second stage, he would hasten the labor in the usual way or cut the cord with a pair of probe-pointed scissors and then employ forceps.

[More definite information on this point is required before one would venture on the diagnosis and treatment of such cases. In the Supplement of the AMER. JOUR. OF OBSTETRICS for November, 1882, will be found an account of a case of "Dystocia from Insufficient Length of the Funis," by Dr. W. T. Lusk, and in the discussion a record of a case by Dr. Fordyce Barker, where the cord was divided artificially, the head being in the pelvis.—D. BERRY HART.]

PROF. SIMPSON then reported

## A CASE OF BASILYSIS.

The patient was a secundipara who at full term was found to have hypertrophic elongation of the vaginal portion of the cervix.

During her labor the cervix protruded about two inches from the vulva, was indurated and ulcerated at its exposed portion. The os externum admitted two fingers, and the head could be felt about a finger's length up. As the child was dead and the cervix in its upper portion was becoming unduly thinned in a way that threatened rupture, Dr. Simpson broke up the vault and base with his basilyst. The head was easily extracted by manual traction, but there was difficulty and some laceration of the cervix and vulva by the shoulders. There was considerable post-partum hemorrhage, but the patient rallied and had a fair puerperium.

During the puerperium the cervix involuted until the anterior lip was five-eighths of an inch long; the posterior one inch.

In his closing remarks, Dr. Simpson drew attention to the ease and thoroughness with which the basilyst did its work.

[For record of a similar case where extraction was had recourse to by means of forceps and great difficulty experienced in the delivery, see Gardner's paper read before the New York Academy of Medicine, April 16th, 1862. Dr. Simpson's basilyst is described in the *Edinburgh Medical Journal*, April, 1880, in his "Contributions to Obstetrics and Gynecology," p. 323, and in Playfair's "Midwifery."—D. B. H.]

## ABSTRACTS.

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1. Sprengel: Communication in Regard to One Hundred and Thirty-one Cases of Carcinoma of the Breast, operated upon in Volkmann's Clinic during the Years 1874-78 (*Centr. f. Gyn.*, Oct. 28th).—This is a condensation of a contribution to Langenbeck's *Archiv*, consisting mainly of statistics. Puerperal diseases have occurred in many of the cases. About thirty per cent of those who had borne children, and afterward were afflicted with cancer, had suffered from mastitis. One is very likely to draw certain inferences from this fact. The site of the disease was most frequently upon the upper and outer side of the breast. Infiltration of the glands in the axilla usually followed the first appearance of the growth, after fourteen months, union with the skin after sixteen months, with the muscles after eighteen months. Ulceration occurred, upon an average, after twenty months. Metastases were observed, upon an average, two years after the local affection first made its appearance, and they were almost invariably accompanied by glandular infiltrations. He does not think that clinical facts support Török and Wittelshöfer in their statement that an extension of carcinoma along the direct course of the blood circulation is relatively common. The question of recurrence is all important.



After the first operation, the average duration of time before the re-appearance of growth is eight months, after the second it is seven, after the third it is two months. When the breast alone is amputated, the disease often returns in the axillary glands, but if these glands have been removed, the recurrence is not usually in the axilla. Of the cases tabulated, twelve were radically cured, more than three years having elapsed since the operation was performed. It is all important that the operation be performed early in the history of the tumor. Out of twenty-nine of the tabulated cases in which there was no glandular infiltration, six were cured, while of one hundred and two cases in which the axillary glands were involved, only nine were cured. Three of the fifteen cases recorded as cured, died of cancer not of the breast, after more than three years of immunity from the disease, leaving only twelve, as already stated, which could be looked upon as radically cured.

ANDREW F. CURRIER.

**2. M. Holl (Innsbruck): On the Topography of the Female Ureter** (*Wiener Med. Wochensh.*, Nos. 45 and 46, 1882).—H. points out that the female ureter has not received the anatomical consideration it deserves both surgically and gynecologically. Reference is made to the contributions of Freund and Joseph, and of Luschka, which, though adding to our knowledge, do not definitely settle the question. The author's conclusions are based on dissections of fresh and frozen pelvis; of the latter, some were injected (blood-vessels, bladder, and rectum) previous to the freezing process, so as to study the parts under all conditions.

The ureters are divided into an abdominal and a pelvic part.

1. The abdominal part of the ureter. The two ureters run a converging course until they enter the lesser pelvis. Their distance from one another at the pelvis of the kidney is 6.8–9 cm. and at their entry into the lesser pelvis 5.7–7 cm. H. then quotes approvingly Luschka's statements respecting the abdominal part ("Topographie der Harnleiter des Weibes," *Arch. f. Gyn.*, 1872, III., p. 374).

2. The pelvic part of the ureter. The left ureter, after having crossed the left common iliac artery one and a half centimetres above its bifurcation, reaches the left hypogastric artery, covering it and crossing it before it divides, and reaches the left pelvic wall at the height of the angle of the larger sciatic notch.

The right ureter, at the distance of one and a half centimetres below the bifurcation of the right common iliac artery, crosses over the external iliac artery and vein; in front of the right iliac artery, then, it lies in the fissure formed by that artery with the external iliac vein, the ureter thus being accompanied by the vein externally and by the artery inferiorly and posteriorly. This portion of the ureter lies at the height of the terminal line. Subsequently it descends with the hypogastric artery, at its external anterior margin, into the lesser pelvis. For the rest of their course the ureters on both sides are alike, thus: Covering the point of origin of the obturator nerve, they cross, in their downward course along the lateral pelvic wall and floor, the points of origin of the obturator, umbilical, and uterine arteries, describe an arch the convexity of which is directed backward and outward, and then terminate in the bladder. The curved portion has a length of nearly nine centimetres, the greatest convexity being where the uterine artery crosses its anterior

surface on its way to the uterus. Along the greater part of the curve the ureter shows a spindle-shaped swelling.

In order to reach the uterus, the uterine artery is deflected from the lateral pelvic wall at nearly a right angle, bending first inward and then upward. This angle is at the height of the external os uteri. At this point is the thickest part of the spindle-shaped swelling. The curve above the uterine artery is close to the uterus and especially the cervix. Some slight deviations between the two sides occur, as other observers have already stated. The curve below the uterine artery first converges downward and inward toward the lateral margin of the vaginal tube. Two centimetres from the crossing, the ureter lies on the anterior surface of the vaginal tube, behind the posterior vesical wall, for a distance of two centimetres, and with a slight upward curve enters the bladder. The distance of the lower end of the ureter from the external os uteri is almost always constant at three to three and a half centimetres. The pelvic part of the ureter at first lies at the lateral pelvic wall, later on the pelvic floor (levator ani). It lies below the peritoneum, with which it is joined by cellular tissue, but not between the layers of the broad ligament. On entering the lesser pelvis, the ureters first diverge, then gradually converge downward; at the distance of four centimetres from the bladder the convergence increases rapidly.

The fullness of the bladder has almost no influence on the position of the ureters; but the rectum, when full, may approach and even touch the right ureter. From these data the possibility of the occurrence of various ureteral fistulæ is considered, and the article concludes with the discussion of the question as to how the ureter can be found in the pelvis, so as to prevent its injury during operations. The author says: "The blood-vessels at the lateral pelvic wall lying beneath the peritoneum will produce folds in the latter. . . . At the sacro-iliac symphysis, under the peritoneum, are the thick trunks of the common iliac artery and vein which at once divide into branches passing along the inner margin of the psoas major muscle—the crural artery and vein—and those descending along the pelvic wall into its cavity—hypogastric artery and vein. Both will raise large folds in the peritoneum along which the vessels extend: a plica cruralis and a plica hypogastrica. The hypogastric fold is of importance for the position of the ureter, because in it is inclosed), as the first structure, the ureter, usually in front (*plica ureterica*, Hasse). An incision in front into the root of this fold at once exposes the ureter; a line drawn from this point, but always remaining at the pelvic wall and floor, forward to the pubic arch (somewhat laterally beside the symphysis pubis) indicates to me the further course of the ureter." These folds are also mentioned by Langer and Hasse. The relations to the uterine artery have been considered above.

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# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

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### THE VALUE OF BISMUTH IN THE TREATMENT OF ULCERATIVE STOMATITIS AND NOMA.

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BY

BEVERLEY LIVINGSTON, M.D.,

Attending Physician to the Nursery and Child's Hospital, the Northern Dispensary,  
etc., New York.

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(Continued from page 445.)

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My first case was admitted to ward 32, Bellevue Hospital, while I was interne, on May 22d, 1878, with the diagnosis of necrosis of the jaw. On examination I found the right half of the upper alveolar border separated from the periosteum, black and necrosed. The teeth were loose, some of which I removed, and as the odor was very sickening, I ordered the nurse to wash out the mouth with 1:40 solution of carbolic acid. I had never seen such a case, and did not appreciate the gravity of it, and, to tell the truth, I think the case was neglected, for, as I remember, the boy (two years old) was in a good condition when he entered, and that it was three or four days before he began to have severe salivation, hard swelling of the upper lip near the right angle of the nose, which, in the course of forty-eight hours caused a black slough to form. This process of gangrene continued to progress until death on June 3d, ten days after he came in. The treatment in this case was not carried out in a manner that would make it worthy of consideration. The autopsy gave the following: Brain edematous; lungs collapsed; heart and liver normal; spleen hard and congested; kidneys pale; blood very fluid. The face showed a gangrenous spot on the right side, extending from the nose two inches out in the cheek; inside the mouth,



the right half of the upper and lower jaw was exposed and dead. This commenced as a case of ulcerative stomatitis, and, I believe from want of judicious treatment, it became gangrenous.

Last winter there appeared at the Nursery and Child's Hospital a series of twenty cases of a severe ulcerative stomatitis, during the service of the late Dr. J. B. Reynolds. As I saw these cases by invitation, and although there are no particular notes, with the aid of Dr. Nelson H. Henry, House Physician during that time, I am able to say that they were as severe as the cases of Dr. Macguire that lived, some seven or eight of them losing parts of their jaws and some of their teeth; that the cheek was swollen and hard in the severe cases; that all had profuse salivation; many had high temperature, and a very fetid breath was common to all; they were quarantined, as Dr. Reynolds considered it contagious; they were all children between one to two and one-half years of age; they were considered in good health for hospital children; they were treated by a milk diet, a mouth-wash of tinct. ferri chlor. 3 i., sat. sol. chlor. potass. 5 ij., used every three hours. Those that had much fever were ordered quinine, and when they were recovering they got acid. sulph. aromat. gutt. i., t. i. d., and by January 14th, 1882, they were all well. About these cases there can be no hesitation; they were cases of ulcerative stomatitis, many of them of a severe form, and they recovered under very simple treatment. On January 20th, 1882, began an epidemic of measles that lasted until March 5th; we had ninety-two cases and thirty-one deaths; one of these deaths was Jennie Quinn, æt. two years, born in the institution and strumous from birth; she was taken, while still suffering from the pneumonia that had complicated nearly every case of measles, with what seemed to be a very severe ulcerative stomatitis, the ulcer being situated on the mucous membrane of the right cheek; in twenty-four hours from the time the disease was first noticed there was a hard, cold spot over the ulcer, profuse salivation, fetid odor, high temperature, and in twelve hours more the spot was gangrenous; during the third day the child died suddenly of collapse, before any line of separation of the gangrene had formed. The ulcer in the mouth had been treated with strong hydrochloric acid. The

autopsy gave collapse of the middle lobe of the right lung, with nodules of catarrhal pneumonia in the lower lobes of both sides, enlarged bronchial and mediastinal glands. The other organs were normal. This case could be placed under noma, as I have restricted it. From this time to June 20th we had no severe cases, but then we found one in a badly-nourished female child, aged one year and eight months, who had a congenital heart murmur, found to be pulmonary at the autopsy. When the case was first seen, the bone of the right lower jaw, in the region of the incisor and canine teeth, was exposed; the case did not seem very severe, but on the sixth day the child died, nothing like gangrene of the lip having made its appearance, and the cause of death was obscure. The autopsy showed a very much hypertrophied heart, with the pulmonary opening contracted to two mm. in diameter, an open foramen of Botal, with the other organs normal, except that the liver presented the peculiarity of having no gall-bladder. The treatment in this case was cauterization with the solid stick of nitrate of silver, application of iodoform, and a carbolized mouth-wash.

Now I come to the cases in which bismuth was used. The first was Fannie N., æt. twenty months, admitted on June 15th, 1882; had an attack of measles 30th of June and recovered. During the last week of August an ulcerative stomatitis developed on the gums of the right upper and lower jaws, in the region of the molars, causing very fetid breath and hard swelling of the cheek over the ulcer in the mucous membrane; the bones of both jaws were exposed and afterwards exfoliated. It was first treated by cleansing with the application of alum, t. i. d., and in about two weeks it recovered, only to develop it again in the same place on September 15th; then bismuth was substituted for alum, and in about four weeks, after slight exfoliating of the bone, again recovered, and has remained well up to date.

The second case, Isabel S., æt. three and a half years, contracted measles in Sept., 1882; it was complicated by catarrhal pneumonia, and during convalescence developed a sloughy ulcer on the gum of the right upper jaw that in twenty-four hours exposed the bone, but was not complicated by trouble with the cheek; this was treated by cleansing t. i. d. with 1:40 carbolic acid sol., after which the ulcers were well packed with

bismuth, and every morning the edges of the ulcer were touched with argent. nit. fusa; iodoform was also applied to the denuded bone, but the case ran a long course, and it was only after six weeks, when a large piece of the alveolar process of the upper jaw came away with loss of the canine and first molar tooth, that it made some improvements. The same treatment, with the exception of the nitrate of silver, was continued, and we had great hopes of her ultimate recovery, when on Nov. 11th, 1882, she died suddenly, and we could not get an autopsy. Here again was a death apparently from stomatitis, with nothing like gangrene of the face.

The third case, Alma M., æt. nine months, admitted Feb. 22d, 1882; contracted measles during August, which was followed by conjunctivitis, diarrhea, and stomatitis. The latter developed in December, and was severe. Bismuth was applied after washing, as in the last case, every four hours for some time; then we used alum, and the case recovered; all the time appropriate stimulating internal treatment of iron, quinine, and whiskey was given in this and every other case.

The fourth case, Jennie P., æt. one and a half years; was admitted on May 31st, 1882. She was a large, fine-looking child, contracted measles soon afterwards, and recovered; in September, 1882, she developed an attack of ulcerative stomatitis, on the right side of the upper jaw in the molar region, with an ulcer on the mucous membrane of the corresponding cheek, causing a hard swelling of that cheek; these ulcers increased, the bone of the jaw was exposed, the canine tooth came out, and before the case got well, a piece of the alveola came away. The treatment was cleansing as above t.i.d. with the use of bismuth; iodoform being used only in the morning. This case recovered in three weeks.

The fifth case, John F., æt. three and a half years, admitted May 31st, 1882; contracted measles in October, 1882, followed by catarrhal pneumonia, and before the latter had disappeared, a stomatitis developed with ulcers on both cheeks in the molar region; these ulcers seemed to be about half an inch deep, the gums opposite them were also ulcerated, and became sloughy, exposing the alveolar process on both sides, resulting in slight caries, with loss of the right canine tooth; there was indurated swelling of both cheeks, salivation, fetor, etc. The treatment



was application of the solid stick of nit. silver and iodoform, once a day, until the ulcers began to granulate, with the usual washing out and application of bismuth t. i. d. until recovery was complete, which took place in seven weeks; patient was discharged Dec. 27th, 1882.

The sixth case, Samuel Clark, æt. three years, was admitted to the Nursery and Child's Hospital on July 7th, 1882, as a markedly anemic child, who had contracted measles early in August, and never made a good recovery, having a chronic conjunctivitis, and eczema over his face; he was put on Fowler's sol. in November, and was nearly over all his troubles when, on Dec. 14th, he was found to have a bad sloughy ulcer on the gum of the lower jaw, near the right incisor teeth. When first seen the bone of the jaw was exposed, but there was no ulcer, or swelling of the lip; the ulcer was covered with a whitish pulpy deposit, bled easily, caused profuse salivation and fetor. The child had been improving ever since the 1st of Dec., he had had a good appetite, his bowels were regular, and we had great hopes that the child would recover. At first his mouth did not seem very bad; it was treated by cauterization with argent. nit. fusa, after washing out the ulcer, and by the application of bismuth every four hours.

The next day the ulcer did not look any better, seemed to have eaten away more of the gum. The same treatment was continued, child was up around the ward.

The following morning, we found that the ulceration had spread to the lower lip, which was swollen, hard, and glossy, and on Dec. 18th, two days after the beginning of the hardness of the lip, and despite the continuation of the above treatment, a cold spot was found in the middle of the swelling, that had lost sensation. This spot was situated about half-way between the edge of the lip and the chin on the right side; knowing we had a case of noma to deal with, and feeling how desperate these cases were, we tried making a deep crucial incision through the dead part, well out into what seemed healthy tissue. The use of bismuth was continued, being packed in after every hour, and iodoform was used to control the smell, and with the hope it might act as it generally does in like affections of the vulva and stop the process. But nothing helped us. In two days more I cut away with the scissors a piece of

sloughy tissue over an inch in diameter, reaching down to the bone and involving the lip; and so we continued day by day to cut away, little by little, the soft structure of the face, so that the day before death the lower jaw was exposed from the first molar tooth on the right side over the canine of the left, so that the mental foramen was visible on both sides. The bone was white and dry, the teeth loose, but did not fall out. After the removal of the first slough the bismuth was not used, but we cauterized with fuming nitric acid, applying plenty of iodoform, and covering the wound with a charcoal poultice. This controlled the odor. We continued twice a day to clip off the dead tissue, cutting on till the child complained of pain and we got hemorrhage; then we would cauterize with nitric acid, but finding things did not improve, after forty-eight hours of this treatment, we substituted pure carbolic acid, and that seemed to control the gangrene better. The iodoform and carbolic acid were continued until death, the wound being packed with absorbent cotton. The patient did not suffer pain, but had to be enveloped in a sheet, so as to control his hands, as he would pick and destroy the dressings. He had great thirst and would drink whenever he could; he was given stimulants, quinine, and iron. The temperature at first was normal; towards the end it went up to  $103^{\circ}$ – $104^{\circ}$ – $105^{\circ}$ . The pulse followed the temperature, and during the last twenty-four hours he had vomiting and diarrhœa. He died on Dec. 28th, 1882, two weeks from the time he was first taken sick with stomatitis. We could not get an autopsy.

Case number seven, Annie Bonick, æt. one year, admitted on Oct. 2d, 1882, is a pale, slight, badly nourished child, whose parents are said to be healthy; suffering from a tumor of the upper lip on the right side, involving part of the cheek, supposed to be a lymphangioma which was burnt on the mucus surface with a hot iron, early in November. This caused a slight slough, and was followed by two attacks of erysipelas, with a chronic induration of the surrounding tissues, which lasted for some four weeks, and before it had disappeared, on Dec. 20th, a sloughy ulcer was discovered on the right lower alveolar process, extending from the middle line to beyond the first molar tooth, and down to the bone, with a hard, red, swollen condition of the under lip, foul breath, etc., and as this case

developed before the case last-related had died, and in the same ward, we were very anxious. The treatment was thorough cleansing with 1 : 40 carbolic, cauterization with argent. nit. fusa, twice a day, and packing the ulcer with bismuth, q. 4 h., iron being given internally. This was continued for three days, when the ulcer began to heal, and the swelling to go down, when only washing with carbolic and the application of bismuth was continued; but as the case did not improve in a week, burnt alum was substituted with very satisfactory result, and in two weeks from the outbreak of the disease the child was well, and has continued so up to the present.

The eighth case, Gustave S., æt. three years, was admitted April 31st, 1882. He contracted measles in August; it was complicated by catarrhal pneumonia, from which he made a good recovery. In December, he was taken with a severe ulcerative stomatitis that extended on the left upper jaw from the incisors to the back teeth, with the usual symptoms. He was treated by nitrate of silver and bismuth; after a week, the cleaning and application of bismuth only was continued. He was cured in six weeks.

I have presented short histories of thirty-one cases of ulcerative stomatitis with five deaths. Before the use of bismuth we had twenty-three cases with three deaths, afterwards eight cases with two deaths, and that would not say much in favor of bismuth; also, in one of these cases (number three), bismuth failed, and alum cured it. In one of the fatal cases, as I have shown, the bismuth did not prevent the gangrene, and in dispensary practice I have just had a case that did not improve under bismuth simply; but after the use of nitrate of silver and alum it was rapidly cured.

At present we place much more confidence in the use of nitrate of silver followed by the application of alum, or bismuth and alum, than in the simple bismuth, as recommended by Dr. Macguire; and that is the treatment I would recommend. In reading over Dr. Macguire's cases, one sees that none of his cases ended in gangrene in which he used the bismuth, and I know he believes that he prevented it. Now, I have given one case that went on to true noma and died even after the most liberal use of bismuth, and several that would not heal until we used alum, so I am forced to the conclusion that bis-



muth is no more a specific for stomatitis than pilocarpine is for diphtheria.

The evening this paper was read before the Obstetric Section of the N. Y. Academy of Medicine, I remarked, after finishing the case of Annie Bonick (case number seven) that the child had, two days before, developed a slight stomatitis on the lower jaw in the incisor region; that it was being treated by the solid stick of nitrate of silver, once a day, the ulcer being washed out with carbolic-acid solution, 1:40, and a mixture of equal parts of bismuth and alum applied every four hours. The next day (February 21st), the child seemed better, and as the lower left molar was pressing on the gum, it was lanced. This morning (February 22d), the child developed erysipelas, for the third time, over the right side of the face; the temperature remained about 104° all day. The local treatment of the stomatitis was continued as above. For the erysipelas, lead and opium wash was used locally, quinine and tincture ferri chlor. internally.

(The discussion that followed the reading of my paper brought out the fact, from Dr. Macguire, that his treatment differed considerably from that which he had given in the *Medical Record* for February 3d, viz., that, after removing all the dead tissues he could, he washed out the cavity with carbolized water by means of a Davidson's syringe; he thought the washing in this manner an important part of the treatment. Then he touched the ulcerated surface thoroughly with a solution of permanganate of potassa,  $\mathfrak{z}$  i. in Aq.  $\mathfrak{z}$  iv. After this, he packed the ulcer with bismuth. This treatment he carried out himself in the severe cases, three or four times a day; in the milder, only once or twice.)

The next morning (February 23d), I found Annie Bonick very much better; the temperature was 100°, and all was doing well, so I did not change the treatment; but the following day (February 24th), a commencing ulcerative stomatitis was noticed on the mucous membrane of the upper lip, to the right of the median line. As the ulceration on the lower jaw had done so well with the nitrate of silver treatment, it was tried here during the first forty-eight hours; but as no improvement took place—in fact, as things looked worse, the ulcer being larger and deeper—on the evening of February

25th I ordered that Dr. Macguire's treatment be substituted, and followed out in all the details, and I have every reason to believe that it was thoroughly carried out. During the next two days the case did not change either way, but on the morning of the 28th a small round ulcer was noticed on the mucous membrane of the month, over the posterior part of the right palate bone, and we could see that the slough was extending, although the treatment had been thoroughly applied. From this time on, the case progressed badly, the ulcer extending upwards and backwards, over the right superior maxillary bone. On the 3d of March, the right cheek showed a hard, cold tumor, which was incised so we could get at the tissues below, which we knew to be sloughy, and remove them, as it was impossible to reach them from the mouth. The temperature this A.M. was  $104^{\circ}$ ; P.M.,  $99\frac{3}{5}^{\circ}$ . The general course of the temperature was irregular, often being higher in the morning than in the evening; to-day the child has a bloody mucous diarrhea; her general condition is good, as shown by the pulse and appetite. The erysipelas has disappeared. The same treatment is continued. I should note here that the parts of the upper lip and right cheek involved by the tumor (lymph-angioma?) resisted the gangrene; but in those parts not included in the tumor the gangrene continued to spread, and on March 7th the child had lost the four upper and the two lower incisors, and the slough had eaten away the soft parts of the right cheek, from one cm. above the vermilion border of the lip to the lower border of the right orbicularis muscle, and from the middle of the nose four cm. out into the cheek, leaving a square hole that had for its base the necrosed surface of the right superior maxillary and malar bones. The right inferior turbinated and palate bones were also necrosed, and one could look back through the posterior nares into the pharynx. To-day the edges of the ulcer did not present the usual ragged appearance, but was as if cut out, the skin over-hanging the muscles; it bled easily, but did not seem to be granulating. The next day things remained the same, there being no attempt at granulation. The child's general condition was good; temperature,  $98\frac{2}{5}^{\circ}$  A.M.;  $102\frac{2}{5}^{\circ}$  P.M.; pulse between 80-100; appetite good, and the bowels regular. Here the process seemed to stop, and for the next twenty-four hours the case looked as

if it would get well, if she only had the strength to withstand the slow process of repair by granulation, when, on the evening of March 9th, the temperature went up to 106°, and the patient died suddenly of cardiac paralysis. The autopsy showed the lungs to be congested, and all the other organs normal. The face was found as above described, and no evidence of pyemia could be detected.

This case was treated as Dr. Macguire recommended, and the process of necrosis seemed to stop only when it reached structures that had sufficient vitality to resist it, and I could not see that his treatment influenced in any way the course of the disease, and the odor was so bad that we had to use iodoform with the bismuth to control it. There was one point not given in the above history that is peculiar, viz., there was no salivation at any time. I can offer no explanation of it, for salivation is usually one of the marked, and often the symptom that will cause one to examine the mouth, and why it should have been absent in this case I do not understand. The tumor of the lip and cheek has not yet been examined. This case does not alter in any way my conclusion as to the value of bismuth, and I think it showed that Dr. Macguire's treatment will not always be successful even if carried out in every particular.

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## SARCOMA AND MULTIPLE MUCOUS POLYPI OF THE UTERUS, IN A CHILD.

BY

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So little is to be found in the text-books and current literature bearing on diseases of the sexual organs in female children, that I deem the following case worthy of a place in the records of unique cases :

In August, 1882, I was requested to see a little girl, whose mother furnished the following history:

About eight months previously, when three years old, a tumor appeared between the labia of the patient, and her mother took her to one of our most skilful surgeons, who, after examination, seized the tumor with forceps and snipped it off with scissors. Some two months afterwards another similar growth appeared, and the same surgeon, after administering ether, again operated on the child. On the recurrence of the growth I was asked to

see the child. Her appearance denoted anxiety rather than suffering; she was pale and anemic, but able to play about with other children. Protruding from the vulva was a small growth very much resembling in shape and color a miniature liver; some bloody fluid was oozing from the vagina. The growth was not sensitive to the touch. I made an appointment to visit the patient the next day for the purpose of removing the tumor, but on reaching the house it was discovered that the protruding substance, which was about the size of a Lima bean, had come away of itself. Upon examination, it was found to be composed entirely of fibrin, entangling some blood corpuscles—in other words, it was a hardened blood-clot. A few days later, a growth differing in color appeared, but the weather being very warm, and desiring to watch the progress of the tumor, I advised the mother to wait until cooler weather set in before submitting the child to any operative treatment. She was placed upon tonic and supporting treatment until October 4th; in the mean time, however, passing several pieces similar to that first described, and also having the same bloody fluid escaping from the vagina. On the date last mentioned, I proceeded to remove the excrescence, aided by Dr. E. C. Meriam and Mr. J. J. Darby, medical student. The patient being etherized, the tumor was seized with a dressing forceps, and on making slight traction, its attachment yielded, and the mass came away. It was about the size of a chestnut, and on examination showed a distinct pedicle. Surprised at the facility with which the operation terminated, I determined to make further exploration while the patient was unconscious. On separating the labia, another mass was found to be filling up the orifice of the vagina. This I likewise seized, and it came away as the first had done. Still another and another were removed, until no more continued to appear. The dressing forceps were now carefully passed into the vagina, and on separating the blades another growth came into view, which was removed by the exercise of very little force. Continuing in this manner, a dozen or more polypi, resembling the ordinary mucous polypus of the nasal cavities, were torn away, very little bleeding resulting from the operation. I now oiled the little finger of my right hand and gently passed it into the vagina, where it at once came in contact with a mass composed of polypi like those already removed. The upper portion of the vagina was filled with them. With the exercise of gentle force, I was enabled to detach a goodly number, and on withdrawing the finger many of them were expelled with a gush. Some, however, were too large to pass, and these I seized with forceps and removed. The manœuvre of introducing the little finger, detaching the masses, and removing them was gone through with several times, some of the growths being as large as walnuts, but the most of them were the size of peas. Finally it became impossible to reach any more of the growths with the little finger, and on trial I found that the index finger could be passed with facility. By making counter-pressure, I was enabled to determine that the cavity of the uterus was distended by the

same kind of growths as have already been described. Some were found pendent from the margin of the cervix; others grew from the cervical canal, and others still had their attachment within the cavity of the uterus. These I continued to remove until only a few very small ones, feeling more like villousities, were to be felt, when I concluded to desist from further efforts. The hand pressed over the uterus enabled me to determine by the finger in that viscus that the uterine walls were immensely hypertrophied. At the same time, an enlargement of considerable size was to be felt to the left of the uterus, but I did not feel justified in pursuing the investigation further just then, as the little patient had been under the influence of ether as long as it was deemed prudent to permit her to remain. She lost very little blood during the operation, and before the day was over seemed to have recovered entirely from the shock of the operation. The growths removed weighed half a pound, and numbered several hundred, the majority of them being as large as Lima beans. Nearly all of them had a pedicle, but occasionally a bunch could be found containing from four to six, which seemed to proceed from a common stalk or broad piece of tissue.

It should have been stated before that, on the morning I operated on this child, the mother sent for me in great alarm to call my attention to an abdominal tumor situated in the hypogastric region. This had not been manifest on palpation at any previous time to either the parents or myself, although I must say but few examinations of the abdomen had been made by me, my attention having been entirely directed to the excrescence protruding from the vagina. Nor was any tumor noticed by either of several physicians who had visited the child previous to my connection with the case.

After removing the mass of polypi, as above stated, the abdominal tumor had sensibly diminished in size, and for a few days there was a bloody discharge, followed by one purulent in character. So little did the child suffer from the operation that she was able to go out walking a few days thereafter. The specimens removed from the child were presented to the Medical Society of the District of Columbia on the evening after their removal, and having been referred to the Committee on Microscopy, the following report was made after examination:

“NOVEMBER 1st, 1882.

“The specimen submitted by Dr. T. C. Smith, which was removed from the genital canal of a girl four years old, presents to the naked eye the following appearances: A multitude of soft, pale-yellowish masses, varying from the size of a pea to that of a walnut, some spherical, others pear-shaped, and others still irregular. On section, most of them were white, and a few had small cysts with granular contents; in some, however, the white gradually merged into a red color.

“On microscopical examination, these growths were seen to be covered with stratified epithelium; the peripheral portion of the growth shows a multitude of small round cells (leucocytes?), but



scattered, or collected in small groups. The intercellular substance was a soft connective tissue, resembling that of mucous polypi in general. No glands were present." The benignity of these growths is rendered manifest by the report of the microscopists, but the extrauterine growths referred to rendered the presence of malignant disease more than probable.

As stated above, the child was able to go out of doors a few days after the operation. No further growths appeared at the vulva, but within a short time it was discovered that the abdominal tumor was rapidly increasing in size, and finally reached the ensiform cartilage. I no longer entertained doubts as to its malignancy, and informed the parents of the child that no hope of recovery was to be entertained. About two weeks after the removal of the intrauterine growths, edema of the lower extremities set in. The urine diminished in quantity, and contained considerable albumen. Dyspnea first appeared one week later, and soon became so severe that the little sufferer could only breathe when resting upon her hands and knees. This continued a week, when death occurred from exhaustion, November 6th, 1882, thirty-three days after the operation.

The parents consented to an autopsy, which I made a few hours after death.

On opening the peritoneal cavity, a large quantity of ascitic fluid escaped. A large tumor of purplish color was now seen to distend the abdomen, and which, on examination, proved to be the uterus. On either side was a large growth, larger than an egg, united to the uterus by slight adhesions. The uterus was firmly held by adhesions posteriorly, and anteriorly was attached to the bladder in its lower portion only. Parts of the vagina and bladder were removed along with the uterus. The specimen was exhibited to the Medical Society, and the foregoing history given. The following description of the specimen was prepared by Dr. D. S. Lamb, and read to the Society at the same time:

"A portion of the greater omentum: the free margin is contracted and thickened, and on section is firm and white, as if a new growth. Spleen, normal; both kidneys presented some dilatation of the pelvis; the right kidney also presented numerous pin-head-sized metastatic purulent foci, some isolated, others in groups, with a brownish-colored intermediate tissue between the individual purulent points of the groups; these points were, many of them, softened to a liquid. All of them projected slightly from the subcapsular surface; some of the growths involved nearly the entire thickness of the cortex.

"The base of the bladder was occupied by a flattened, nodulated, firm growth.

"The uterus measured four and one-half inches in length, and three and one-half inches in breadth at the fundus. The anterior wall of the body was three-quarters of an inch in thickness and the posterior wall one and three-quarter inches. The cavity measured four inches in length and one inch in *circumference*. The walls were firm, somewhat elastic, and apparently homogeneous

in structure; no cysts. The surface of the cavity presented irregular nodulations and a few small polypoid growths; the cavity itself contained a little glairy mucus.

"The ovaries presented each a few small aqueous cysts.

"The vagina measured about four inches in length, and was much distended. The walls were much thickened by a tissue resembling that of the uterine walls. The mucous surface presented flattened nodular elevations of various breadths and polypoid growths of various sizes.

"Appended to the uterus and vagina were many subperitoneal growths of a roundish shape; some pedunculated, others sessile; the size varied from that of a pea to as much as three inches in diameter; their structure was similar to that of the uterine and vaginal walls. Some of them presented patches of internal hemorrhage."

This specimen was referred to the Committee on Microscopy, who reported that it was a "round-cell sarcoma." Four months after its removal, the uterus and appendages weighed thirty-one ounces.

(To be concluded.)

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## ABSTRACTS.

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Prepared by J. FEWSMITH, JR., Newark, N. J.

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**1. Demme: Peculiarities of an Epidemic of Measles. The Proportion of the Blood-Corpuscles in the Course of the Disease** (*Jahrbuch f. Kindh. u. G.*, 19 B., 2 H.).—Of two hundred and twenty-four cases of measles, there were thirteen deaths, 5.8 per cent. Twice, death was caused by the violence of the intoxication and the excessive fever on the second day. The duration of incubation averaged ten to twelve days, but in a few cases was only three days. There were some noticeable cases of transitory and hereditary immunity from the disease. The epidemic in Bern began at a time when there was much scarlatina present, and D. noticed in all the cases of measles a very pronounced angina initialis, and repeatedly morbilli was rapidly followed by scarlatina in the same person. A girl suffering from chorea was attacked, and a boy nine years old suffering from prurigo. The former was freed from her chorea, the latter from his obstinate prurigo. A child of three years had measles twice in ten weeks. In some cases there was excessively high temperature with the eruption—42.3° and 42.6° in two cases with recovery; 42.7° and 42.9° in two cases with fatal result. Three times the whole course was afebrile; and in one case the temperature was subnormal. In seven cases there was angina tonsillaris necrotica exactly similar to that occurring in scarlatina. In three cases croupous-diphtheritic laryngo-tracheitis was present; in four cases, acute pericarditis; in three, acute endocarditis; moreover, some cases of glomerulo-nephritis in the desquamation stage of undoubted measles, once even with uræmic symptoms. There were two cases of

complicating gangrene, one of the vulva and one of the lower jaw, but ending in recovery. Examination was made in twenty cases of the increase and decrease of the red corpuscles and especially of their proportion to the white corpuscles. Occasionally just in the beginning of the fever there was a slight increase in the red corpuscles, but with the further development of the eruption there was a decrease which continued from seventeen to forty-eight hours after the fever, so that the number of red corpuscles sank to less than half the normal. After eight to ten days the figures gradually increased. Spectroscopic examination showed at first an increase and after the outbreak of the eruption a decrease of the hemo-globuline. The decrease of the red blood-cells took place in one case of eruption with totally afebrile course. In a certain number of cases there was acute swelling of the thyroid gland which frequently did not yield without iodine treatment. It occurred usually in the first three days, was accompanied with dyspnoea and in ten cases disappeared very rapidly. In one case an abscess formed, the pus from which contained a large amount of rod-bacteria and micrococci. In this case the whole right lobe of the thyroid came away—termination in recovery.

**2. Martin, Gueniot, Kolischer: General Vaccine Eruption.**—DR. H. A. MARTIN (*N. Y. Med. Rec.*, 597) reports: A lady, aged thirty-six years, and her son, aged three years, were vaccinated on February 13th, 1882, while an infant, seven months old, was not vaccinated because suffering from eczema capitis. The vaccination of the mother was successful. Sixteen days after, the infant became feverish, and showed in the region of the elbows red papules, which in the next three days extended over the whole body, but were especially numerous where the eczema was located. The eruption resembled variola, but all the efflorescences were round, surrounded by a red border, and ran exactly the course of vaccine pustules. From their contents, M. vaccinated a calf successfully, and from this, further, three children with good result.

Dr. Guéniot (*Progrès Méd.*, 20, 1882) vaccinated a child five months old which had eczema of the head, shoulders, and breast. Four days after the vaccination, large umbilicated papules appeared upon the eczematous surfaces, and by the eighth day reached the number of from two hundred and sixty to two hundred and eighty, and presented the picture of a variola confluens. They were accompanied with severe itching, and great loss of strength, but ran, however, the course of ordinary vaccine pustules.

Dr. S. Kolischer (*Deutsch. Med. Wochenschr.*, 28, 1882) vaccinated a boy sixteen years old who had eczema faciei. Eight days later, the boy showed well-marked vaccine pustules upon the left arm where he was vaccinated, confluent pustules on the face, about ten pustules upon the flexor surface of each arm and leg, two on the pubis, and two on the dorsum of the penis. These followed the usual course, and left behind them the characteristic cicatrices. The general health of the child was undisturbed. The mother of the child, whose skin was perfectly intact, contracted one pustule upon the cheek, chin, and forearm.

Blot, Serebault, and E. Besniés have observed similar occurrences following vaccination of eczematous children, and although the result has never been fatal, it is a question whether under such circumstances, it is not better to postpone the vaccination.



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ORIGINAL COMMUNICATIONS.

THE TOPOGRAPHICAL RELATIONS OF THE FEMALE PELVIC  
ORGANS.

BY

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(Part IV., with two woodcuts.)

(Continued from Page 504.)

THE PELVIC CELLULAR TISSUE.—If a plane be imagined as passing from the central point of the inner surface of the pubes to the point of junction of the third and fourth bones of the sacrum, the entire pelvic peritoneum (save a part of Douglas' pouch), would lie entirely above it. Beneath this imaginary plane, in the intervals which exist between the various viscera of the pelvis, ramify the blood-vessels, lymphatics, and nerves, and a collection of fibrous and fibro-elastic elements and muscular tissue, which compose the so-called cellular tissue of the pelvis. This imaginary plane may be said to divide the pelvic cavity into two spaces, the *peritoneal* and the *subperitoneal*.

<sup>1</sup> The *recto-vesical fascia* must be considered as marking the lower limit of this space. This fascia lies immediately above, and in close contact with the levator ani muscle. A prolongation of the *obturator fascia* covers the inferior surface of this muscle. A diagram on a subsequent page (Fig. 22) will tend to make this arrangement clear to the intelligence of the reader.

It is within the latter space that the structure which we are now to consider is exclusively confined. The proportions of the fibrous, fibro-cellular, connective, and muscular elements, which enter into the formation of the pelvic cellular tissue, vary; one or more predominating according to the *physiological functions* which it is destined to perform in any special locality. The functions of this tissue depend somewhat upon its situation. When it is placed in intimate relation to blood-vessels it acts, by its excess of muscular elements, as an important factor in the erecto-plexiform character of the venous system of the pelvis. When it is employed as a means of attachment for organs, it assumes more of a ligamentous structure, and becomes an important agent in preserving the mutual relations of the organs which it serves to connect, and also acts as a factor in preventing their displacement from their normal attitude. Some portions of this tissue act as lines of traction upon different portions of the uterus; some tend to keep the walls of the vagina in contact, since that tube is drawn both backward toward the sacrum, and laterally toward the sides of the pelvis; some maintain the Fallopian tubes in their proper relation to the ovaries; and some bind the ureters to the various structures with which they bear intimate relation.

This cellular tissue forms an integral part of the uterine system. It surrounds and constitutes a frame-work for the plexus of vessels which ramify within and upon the muscular structure of the uterus and vagina. It is continuous at its periphery with the sub-peritoneal cellular tissue of the walls of the abdomen. Those fibres, which may be considered as a "pubo-sacral process" of the entire mass, seem to be intimately associated with the chain of blood-vessels (chiefly venous) which begin at the bulbs of the vagina in front, and continue as plexuses upon the bladder, urethra, vagina, and uterus; while the muscular elements are continued still farther back in the sacro-uterine ligaments. Another set of fibres, which may be classed as the "utero-iliac process" of the entire mass, passes from the uterus along the vessels of the broad ligament to the sides of the pelvis, in a region somewhat anterior to the sacro-iliac synchondrosis, except during pregnancy.<sup>1</sup> It is thus easy

<sup>1</sup> See pages which treat of the broad ligaments.

to understand why the anterior and posterior layers of the broad ligament of the uterus are separated by this process of the pelvic cellular tissue; since its muscular fibres are sufficiently developed to afford that reflection of the peritoneal lining of the pelvis a power of resistance in excess of the simple elasticity of the peritoneum itself, in addition to the control exerted by them over the blood-supply of the womb. The bearings of the broad ligaments and also of the sacro-uterine ligaments upon uterine displacement have been discussed at some length in preceding pages.

Savage describes the cellular tissue of the pelvis as having been apparently thrust between the rectum and the bladder beneath the pelvic peritoneum, and as having fixed itself there by cellular attachments to every available part of the pelvic cavity. He makes use of the following clinical deduction: "The independence of this uterine collocation is exemplified in certain forms of sub-peritoneal abscess of long standing, which leave unaffected from first to last the rectum, ureters, and bladder."

The relations of the rectum and the upper portion of the urethra to this tissue are peculiar; each being inclosed in a complete investment or sheath which can be easily stripped off. In the median line, the cellular tissue between the peritoneal covering of the fundus uteri and the organ itself is so nearly wanting as to be of no importance from a clinical standpoint. Farre, in his researches, succeeded in removing this peritoneal coat only after prolonged maceration; and Goupil confirms this view in his statement that its presence can scarcely be determined between the peritoneum and the vagina and fundus uteri.

Viewed in the light of clinical experience, the experiments of König and Hewitt, as to the effects of the cellular tissue of the pelvis upon fluid or air injected beneath the peritoneum in different localities, have a special interest. It was found that when the injection was made near to the ovary or the Fallopian tube, the fluid passed slightly into the corresponding side of the pelvis by following the course of the psoas and iliacus muscles; when injected close to the upper and front portion of the cervix, it passed along the course of the round ligament of the uterus and subsequently into the pelvic cavity below the



iliac region; when injected posteriorly to the cervix beneath the broad ligament, it passes into the posterior and lateral portion of the pelvic cavity, and afterward along the psoas muscle. These experiments enable us to appreciate the probable course of purulent collections within the pelvic cellular tissue. Pelvic abscesses may point or spontaneously open in one of the following regions: 1. In the iliac region. 2. In the suprapubic region, possibly reaching to the level of the umbilicus. 3. In the inguinal region, or thigh, following the psoas muscle. 4. In the perineum, at the side of the anus, having possibly escaped from the pelvis through the sciatic notch. 5. Into the vagina. 6. Into the cavity of the bladder. 7. Into the cavity of the rectum. 8. Into the cavity of the peritoneum.

The excessive development of cellular tissue between the layers of the broad ligaments renders this locality a frequent seat of these abscesses. They may sometimes be felt distinctly through the walls of the vagina and, if artificial evacuation be attempted, it is well to select this channel for that purpose. Such procedures are, however, not without danger. The remarkable size and anastomoses of veins within the pelvis point to one great risk, viz., the entrance of air into these channels. A case has been reported where sudden death followed an attempt to evacuate a collection of fluid within the region of the broad ligament—probably due to this cause alone. The subject of abscess of the pelvis has been considered at a greater length than space will here permit of, in the last edition of Thomas' standard work.

During gestation, this cellular tissue undergoes an enormous hypertrophy to fill the space left vacant by the ascent of the uterus and its broad ligaments. After parturition, the excess of this tissue is slowly absorbed, and the uterus and its broad ligaments gradually tend to resume their former relations to the other pelvic structures.

*Points of special interest pertaining to the pelvic cellular tissue.* As a summary of the previous pages, the following deductions may be drawn:

The pelvic cellular tissue lies underneath the peritoneum, padding the interstices between the organs and muscles of the pelvis, embracing the cervix uteri, and spreading from that

point between the layers of the broad ligaments to reach the pelvic wall.

Our present knowledge of its disposition has been rendered more accurate in late years by the following methods of research: 1. By the careful examination of sections of frozen bodies and spirit-hardened pelves. 2. By injections of air beneath the peritoneum at various points, and afterward tracing its ramifications. 3. By the injection of water. 4. By the injection of plaster of Paris.

The first method affords a proper conception of the precise position of this tissue, its amount, and the area of its distribution in special topographical regions. Hart mentions the following sections as of value for this purpose: antero-posterior median (sagittal); antero-posterior lateral (lateral sagittal), intersecting the line of junction of the uterus with the broad ligaments; horizontal, at various levels; and, finally, the transverse section through the central point of the pelvis (coronal section).

The second method, assisted by the third and fourth, reveals the attachments of the cellular tissue to the pelvic peritoneum, and the tracts which normally exist between its various prolongations along which pus might burrow. In this way, our knowledge of the results of inflammatory attacks within the pelvis is placed upon a more positive footing, and our discrimination of the same made more precise.

The *retro-pubic fat* has been discussed in connection with the bladder and urethra. It is revealed by the sagittal section. It is triangular in shape. Its relation to the pubes is modified by the posture of the woman, especially in the genupectoral, in which it rises partly above the symphysis.

The *recto-vaginal process* extends between these tubes as low as the level of the pelvic floor. It is comparatively destitute of fat. It allows of the ever-varying degrees of distensibility of these tubes. It is best studied in the sagittal action of the pelvis.

The *vagino-vesical process* exists between the upper part of the anterior vaginal wall and the posterior surface of the bladder. Note that no such deposit of connective tissue exists between these organs in the lower two-thirds of the vagina. The small amount of tissue comprised in this process allows of

a close approximation of the pelvic peritoneum to the upper portion of the anterior vaginal wall, when the bladder is empty—a point possessing surgical value.

The *rectum is separated from the sacrum* by a small amount of connective tissue, as seen in all sagittal sections.

*Lateral sagittal sections* show (1) a marked diminution of the retro-pubic fat; (2) that the laminae of the broad ligaments are separated by a process of cellular tissue, studded with large vascular trunks, which steadily diminishes as the pelvic wall is approached; (3) that the base of the broad ligament touches the fornix vaginae, except during gestation; (4) that the ovary bears an intimate relation with the anterior lamina of the broad ligament, while the posterior lamina is separated from it; (5) that the section of the round ligament of the uterus lies above that of the ovary, and anterior to it and the Fallopian tube.

*Horizontal sections* of the pelvis show (1) the retro-pubic fat; (2) the tissue of the ischio-rectal fossa; (3) the "parametric tissue" of Virchow and Spiegelberg; (4) abundant blood-vessels and lymphatics, imbedded in the parametric tissue, surrounding the lower part of the uterus and the upper part of the vagina.

*Coronal sections* reveal the relations of the pelvic cellular tissue and the ischio-rectal fossae. The iliac, recto-vesical, obturator, and levator ani fasciæ, are also brought to view in their relations to the structures which form the female perineum. The respective outlines of the peritoneal, subperitoneal, and subcutaneous cavities are also rendered apparent. A diagram which I give in a subsequent page will enable the reader to grasp the somewhat intricate relations of these parts.

König's and Hewitt's researches, by means of subperitoneal injections, have been referred to, and need not be repeated. Bandl has also added to our knowledge, by similar experimentation. It would appear that fluid injected into the cellular tissue of the upper part of the broad ligament penetrates but to a slight extent into the cavity of the true pelvis, seeking rather a higher level in the neighborhood of the anterior wall of the abdomen. If injected, however, near its base, the peritoneum around the front of the cervix became raised, and the fluid followed the round ligament to the inguinal ring, and then passes



into the iliac fossa; if introduced posteriorly at the same level, the region of Douglas' space became first infiltrated, and then the region of the psoas muscle.

**THE OVARIES.**—Having discussed the reflections of the pelvic peritoneum, we are now capable of more accurately understanding the topographical anatomy of the ovaries. These bodies are best studied in the young virgin, because their surface is then smooth and their outlines more distinct than in the adult, when their surfaces are scarred by the rupture of the Graafian follicles. The ovaries are extremely movable, and their situation may be greatly modified by the relative position of the neighboring organs—chiefly that of the uterus and rectum. The wide variations in description with may be found to exist in the works of the more prominent anatomists is to be attributed largely to this fact.

These organs are analogous to the testes of the male and are classed under the head of follicular glands. Their size and shape may be compared to that of a small almond. They are usually found between the layers of the broad ligament, lying in the posterior pelvic space (see Figs. 7, 10, 19 and 20.) The inner extremity of each ovary lies about one inch from the lateral margin of the uterus and is connected to the cornu of that organ by a band of fibrous and muscular tissue, called the ovarian ligament. The outer extremity is connected to the fimbriated end of the Fallopian tube. The left ovary bears an intimate relation with the rectum. Each ovary is free on its two sides and also on its posterior border; but its anterior border is united to the anterior layer of the broad ligament, and at this spot the point of entrance of the vessels of the organ—the hilus—may be perceived. The measurements of the young virgin ovary are greater than at any other period of life, save during the first six weeks of utero-gestation, when the breadth and thickness of the organ are not altered, but its length is markedly increased. After parturition, the ovaries never again regain their former dimensions, unless from disease.

The two borders of the ovary are usually stated to be convex, but I have found the opinion of some of the later observers, viz., that the anterior border is practically straight, to be correct. This straight border is the attached one; and all other parts of the organ are freely movable. The investigations

of Waldeyer have changed the prevalent opinion regarding the reflection of the peritoneum over the ovary ; since it now seems to be well decided that the character of the epithelium changes as soon as the peritoneum is apparently reflected upon the ovary, thus transforming the investing coat of the organ into that of the mucous rather than serous type. It is now accepted, I think, as proven that the surface of the ovary must be considered as structurally continuous with the lining membrane of the Fallopian tube rather than with the peritoneum.

Most of the drawings of the ovary and its relative position to that of the uterus and the Fallopian tubes do not agree with my own observations, although the latter have been too limited to form a reliable basis for any positive deductions. I have almost invariably found the left ovary to be the smaller of the two. The surfaces of both organs have been more often flattened than markedly convex. The long diameter of the ovary, upon both the right and left side, I have found to lie usually in the vertical but sometimes in the antero-posterior diameter of the pelvis, in the virgin ; seldom in the transverse pelvic diameter as is usually stated in text-books.<sup>1</sup> The left ovary was found to lie in contact with the rectal wall in almost every case examined. The point of attachment of the ovarian ligament to the uterus was usually found to lie between and below the attachments of the round ligament and the Fallopian tube.

My own observations have been especially directed toward the determination of another point in which I believe that most anatomists are in error, viz., the relation of the Fallopian tube to the ovary. In most of the accepted drawings of these parts, the Fallopian tube is represented as practically straight for some distance, as it passes from the uterus toward the pelvic wall, and then to terminate in its fimbriæ which hang considerably below its level, but in relation to the outer extremity of the ovary whose long axis is represented transversely. Now I have found in most of the virgins examined that this is not the case. On the contrary, the Fallopian tube has assumed rather the condition of an incomplete surcingle to the ovary ;

<sup>1</sup> This view is in full accord with the researches of His. Tait, Doran, Thornton, and others have likewise confirmed the frequency of the vertical attitude of the ovary.

the fimbriated extremity passing so far below and around the ovary as to lie immediately beneath its convex border. If this condition be proven to be the normal one, the necessity for the grasping of the ovary by the fimbriæ during the escape of the ovum would seem to be wanting, as gravity alone would act as an important factor in causing the ovum to fall into a proper place for its prompt transmission to the uterine cavity by the Fallopian tube.

I am aware that this conclusion has been also arrived at by Doran, Tait and Thorton, and that some confirmatory observations respecting it have been lately offered in the London Pathological Society proceedings. It seems to me to be a point in topographical anatomy which will well repay extensive investigation, and I am glad that my own observations have been confirmed by others. Upon the left side, I found that the Fallopian tube did not dip so far down into the pelvis on account of the rectum, but that in some instances it nevertheless bore the relation to the ovary which I have described.

*Points of special interest pertaining to the Ovaries.*—The relation of the Fallopian tube to the ovary, as given on a previous page, will help to explain some clinical points which present themselves in cases of suppuration and dilatation of the Fallopian tubes and in tubal pregnancies.

As the fimbriæ of the tube run upward to reach the ovary, a slight attack of peritonitis might glue them to that organ. If the tube should become distended after such an agglutination, as in cases reported by Tait, the dilated pouch would be sausage-shaped and firmly connected to the uterus by the ovarian ligament, while the ovary itself would be included between the tumor and the uterus.

Tube-ovarian cysts, for the same anatomical reason, lie either external to or below the ovary, and not above it as would be the case if the old idea of the normal course of the tube were correct.

Fetation of the outer third of the tube, must, of necessity, lie below the ovary and not above it, and might therefore be easily confounded with ovarian pregnancy.

Ovulation seems to create menstrual changes in the mucous lining of the uterine body, but exactly what these changes are must be considered as unsettled. Williams supports the view



that the mucous coat is entirely destroyed at the menstrual epoch and that it is regenerated from the muscular coat, by cell-proliferation. Kundrat and Engelmann maintain that only the superficial layer of the mucous membrane of the uterus is shed, as a result of fatty degeneration. Möricke denies that any of the mucous lining is removed, since microscopical examination of the substance, removed by a curette from uteri of menstruating women, fail to sustain the statements of the authors previously quoted.

The dominant influence of the ovary upon menstruation has been disputed by some late authors, among whom Tait stands foremost. It is known that Battey's operation does not totally arrest the process, even where both ovaries are removed. It is claimed by Tait that menstruation will always cease, however, when the Fallopian tubes are likewise excised. This author believes that these tubes play an important part in the menstrual function which has hitherto been unsuspected.

The medico-legal bearings of the "corpus luteum" are based largely upon the valuable essay of Dalton.

The Fallopian tube is kept in its proper relations to adjacent parts by the ovarian and infundibulo-pelvic ligaments. The former measures about 3 cm. and the latter 2 cm. in length. The infundibulo-pelvic ligament is simply that portion of the upper margin of the broad ligament which is not occupied by the Fallopian tube.

THE CIRCULATORY ORGANS OF THE PELVIS.—We have now considered the topographical relations of all of the pelvic viscera, their peritoneal reflections, and the pelvic cellular tissue. In many places the vessels have been casually referred to, when any point arose which had a direct bearing upon them, but no special description of them has as yet been given. The blood-vessels are always a source of fear to the operating surgeon, and their course and relations cannot be given in too great detail; but as lack of space precludes a complete description, I will call attention to such points as are of special surgical or physiological value, and leave the remainder to those reliable works which are at every reader's command.

The female pelvis is remarkable for the number of its venous channels and their extensive anastomoses. The uterus, rectum, vagina, bladder, and urethra have venous plexuses

which almost completely invest them, and which, by their anastomoses with each other and the veins of the perineum, form a continuous chain of veins from the sacrum posteriorly, to the bulbs of the vagina in front. The broad ligaments of the uterus also inclose extensive venous plexuses.

The veins of the pelvis are almost entirely destitute of valves; hence their communications are of surgical importance from the danger of excessive hemorrhage which they entail upon any wound of the pelvic organs or even of the structures which compose the pelvic floor.

Besides, the veins of the pelvis serve other important purposes than as mere channels for the transmission of blood. In order to appreciate this statement, it is necessary to divide the pelvic structures into three classes: the *erectile*, the *erecto-turgescient*, and the *turgescient*. The *erectile* structures include the clitoris and its two crura; the *erecto-turgescient* include the body of the uterus, the bulbs of the ovary, and the bulbs of the vagina; the *turgescient* comprise the urethra and the vagina.

In the *erectile* structures, the circulation is of the ordinary character, except when the special functions of the parts are called into play; then they become enormously engorged with blood, and assume the condition termed "erection." In the *turgescient* structures, the blood supply is normally excessive, and suffers little temporary alteration in any of the physiological processes. In the *erecto-turgescient* bodies, the normal turgescence is supplemented, at times, by the condition of temporary erection, thus acting in concert with the *erectile* bodies. Each of these three classes of structures has a distinctive peculiarity as regards the arrangement of its blood-vessels which is characteristic. The chief features of these peculiarities will be found summarized in the excellent work of Savage, and given in more detail in the larger treatises upon histology.

Between the layers of the broad ligaments of the uterus, the spermatic vessels reach the hilus of the ovary of either side, at which point the artery enters and the veins escape. The spermatic veins anastomose with the sub-ovarian plexus of veins, and these, again, with the veins of the uterus, thus forming one continuous chain of large venous channels for the en-

ture length of the broad ligament. The rupture of the sub-ovarian plexus is one of the most frequent causes of pelvic hœmatocele.

The uterine artery and veins lie in close relation with the folds of the broad ligament near to its base, and also with the vagina at its upper portion, and are in free communication with the vessels of the lower part of that tube. Along the sides of the uterus, between the folds of the broad ligaments, is found an enormous collection of veins, intermingled with spiral branches of the uterine artery, whose ramifications invest the entire organ. In a corroded preparation, as depicted in Savage's work, this arrangement of the vessels of the body of the uterus (chiefly venous) is beautifully shown. This collection of veins has a free anastomosis with the sub-ovarian plexus.

The uterine artery and a circular branch, which is sometimes present, might cause serious hemorrhage in operations upon the cervix. The vesical and vaginal branches are uncertain in their point of origin and distribution; hence they are liable to cause unexpected embarrassment in operations for vesico-vaginal fistula. The anastomosis between the spermatic and uterine arteries is of surgical importance in all procedures for the removal of the uterus, since a ligature applied to the cervix or to the vagina just below its uterine attachment would fail to control the hemorrhage from the spermatic artery. In those cases where the uterine artery is abnormally small, the spermatic artery is proportionately enlarged. The uterine artery passes between the layers of the broad ligament, at first near to its bony attachments; it then passes through the cellular tissue between the uterus and the pelvic wall in the base of the broad ligament; finally, it ascends between the layers of the broad ligaments, close to the lateral border of the uterus. It sometimes surrounds the ureter, like a cord.

THE FEMALE PERINEUM.—An article which treats of the anatomy of the female pelvic organs is not complete without some mention of the relative situation of the important structures which form the pelvic floor. This portion of regional anatomy in the female is either omitted entirely or inadequately described by most authors on anatomy. In the last edition of Thomas' treatise, the meagreness of our knowledge



upon this subject has been referred to at some length. I may be pardoned, therefore, if I quote from quite an exhaustive article<sup>1</sup> upon the anatomy of this region, an extract which seems to me to cover the main points that my own researches have led me to believe and publish. The article itself will, if consulted, supply many deficiencies which may occur to the reader.

“A GENERAL SUMMARY OF THE ANATOMY OF THE PERINEUM.—It is an impossibility to represent, in any one drawing, an ac-

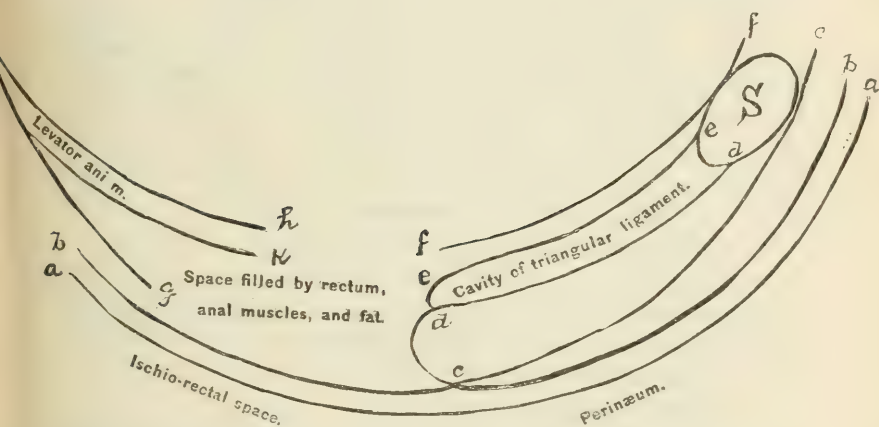


FIG. 21.—A Diagram designed to show the General Construction of the Female Perineum and Ischio-rectal Fossa. *a*, line of skin; *b*, line of superficial layer of superficial perineal fascia; *c*, deep layer of same; *d*, anterior layer of deep perineal fascia (triangular ligament of the perineum); *e*, posterior layer of same; *f*, iliac fascia covering pudic region; *g*, same fascia from the sides of the pelvis splitting into two lamellæ; *h*, obturator fascia; *i*, recto-vesical fascia; *S*, symphysis; *k*, fascia covering the levator ani muscle on its lower surface.

curate conception of the parts which have been discussed in the preceding pages. A sagittal section of the pelvis fails to give a true conception of the iliac fascia and the two lamellæ into which it divides at the level of the obturator internus muscle; while, on the other hand, this section is the only one which can be used in a diagrammatic way to represent the layers of the perineum, so as to properly appreciate their relations

<sup>1</sup>“The Female Perineum,” by A. L. Ranney, New York Med. Jour., July and August, 1882.

to each other. Savage has attempted to utilize a section of the pelvic structures made in the bis-ischiatic diameter of the pelvis, for the purpose of showing the relations of parts in the ischio-rectal fossa, but it strikes me as calculated, if used alone, to confuse rather than enlighten the reader. After innumerable attempts to devise a sketch which will fulfil the desired object, I have concluded to fall back upon the simplest form of diagram, which will enable the reader to grasp some of the more important points, without attempting to aim at any similarity to the parts as actually presented by dissection.

"It will be seen that the cut shows the perineum and ischio-rectal space as adjoining one another, and inclosed by a continuation of the same layer of integument (*a-a*). The superficial layer of the superficial perineal fascia (*b*) likewise extends over both regions, but becomes adherent to the deep layer of the same fascia (*c*), at the line which divides these localities. Thus we have two layers which are common to both of these topographical regions. In the ischio-rectal space, we see that the *iliac fascia* sends two prolongations downwards—the *obturator fascia* (*g*) and the *recto-vesical fascia* (*h*), the former of which follows the pelvic wall, and incloses the obturator internus muscle, while the latter passes to the bladder and rectum, as its name indicates. The recto-vesical fascia bears an important relation with the levator-ani muscle, and is therefore of great importance here.

"In the ischio-rectal space, there remains a large excess of room between the recto-vesical fascia and the pelvic floor, which is filled with the levator-ani muscle, the levator-ani fascia (*k*), and fatty tissue.

"If we turn to the perineum proper, we shall perceive that several layers are depicted in the diagram, and that between these are left spaces which afford room for muscles, blood-vessels, nerves, etc. The dividing lines (*b, c, d, e, f*) depicted in the drawing are supposed to represent the different fasciæ. The various structures which are discovered between these fasciæ, as a dissection of the perineum is being made from without inward, can best be arranged in the form of a table, as follows:

Between the integument and the superficial layer of the superficial perineal fascia.	<ul style="list-style-type: none"> <li>Superficial hemorrhoidal vessels.</li> <li>Superficial hemorrhoidal nerves.</li> <li>Superficial perineal artery and nerve.</li> <li>Pudendal artery and nerve.</li> </ul>
Between the deep layer of the superficial perineal fascia and the triangular ligament.	<ul style="list-style-type: none"> <li>Three pairs of muscles. <ul style="list-style-type: none"> <li>Bulbo-cavernosus.</li> <li>Erector clitoridis.</li> <li>Transversus perinei.</li> </ul> </li> <li>Transverse perineal artery, vein, and nerve.</li> <li>Venous plexuses.</li> <li>Bulbs of the vagina or vestibule.</li> <li>Pudendal sacs.</li> <li>Dorsal artery and vein of clitoris.</li> </ul>
Between the two layers of the deep perineal fascia (the cavity of the triangular ligament).	<ul style="list-style-type: none"> <li>Compressor urethræ muscles.</li> <li>Muscular fibres of the vagina attached to the rami.</li> <li>Pudic vessels and nerves.</li> <li>Urethra } perforating both layers.</li> <li>Vagina }</li> <li>Origin of four branches of pudic artery.</li> <li>Vulvo-vaginal glands.</li> </ul>
Between the triangular ligament and the iliac fascia.	<ul style="list-style-type: none"> <li>Pubo-coccygeus muscle.</li> <li>Fibres of the levator ani muscle.</li> </ul>
Between the obturator and recto-vesical fasciæ.	<ul style="list-style-type: none"> <li>External hemorrhoidal vessels and nerve.</li> <li>Levator ani muscle.</li> <li>Adipose tissue (in excess).</li> <li>Perineal process of the obturator fascia (covering the levator ani muscle), designated in the text as the "levator ani fascia."</li> </ul>

"The *ischio-rectal fossa* demands a special summary. As has been stated, it is impossible to properly represent its various component structures in a sagittal section of the pelvis. Perhaps the best view of this space can be obtained in a section of the pelvis made through the tuberosities of the ischia, although the relations of both the vagina and the rectum to this space are not seen even then. The diagrammatic cut which is here introduced will, however, possibly assist the reader to grasp some of the most difficult points which such a section would help to make clear. It should be premised that this cut is purely diagrammatic, since the plane of such a section would cut the vagina in its transverse rather than its long diameter, and thus confuse the reader, if the section were properly represented. It is sufficiently accurate, however, for all practical purposes, and shows the general relation of parts even better



than if made true to nature. It will be seen that the following fasciæ are met with in a dissection from above downward: 1st, the recto-vesical fascia; 2d, the dense fascia which lies beneath the levator ani muscle; 3d, the two layers of the triangular ligament, situated below an extensive space filled with fat; 4th, a muscular layer beneath it; 5th, the deep layer of the superfi-

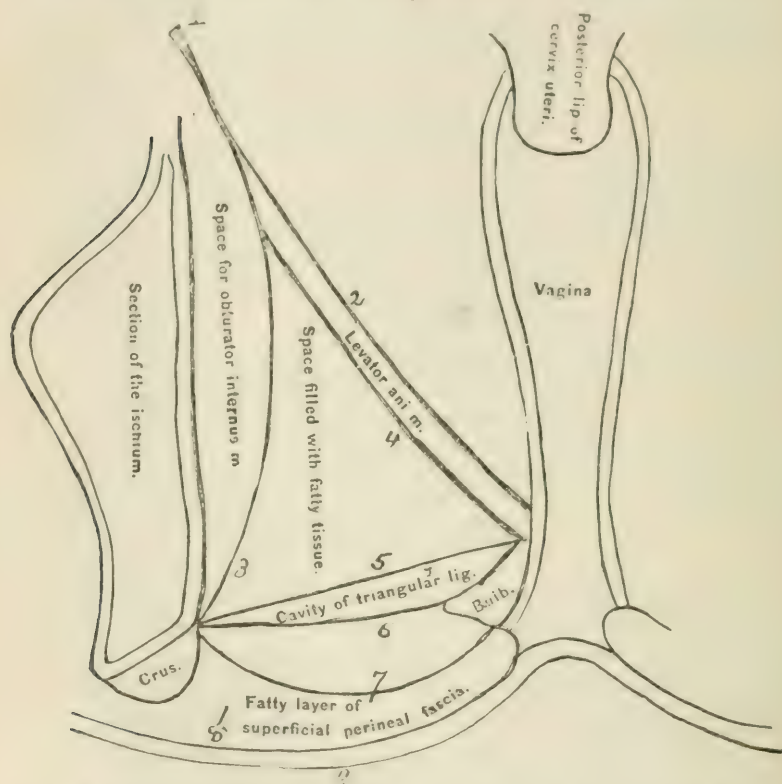


FIG. 22.—A diagram of a perpendicular pelvic section through the bis-ischiatic diameter. 1, iliac fascia; 2, recto-vesical fascia; 3, obturator fascia; 4, perineal process of obturator fascia, covering the under surface of the levator ani muscle; 5, deep layer of triangular ligament; 6, superficial layer of same; 7, deep layer of superficial perineal fascia; 8, superficial layer of same; 9, skin.

cial perineal fascia and the muscles beneath it; 6th, the superficial layer of the same fascia with its deposit of fatty tissue; 7th, the skin. The diagram shows, in addition, that the bulb of the vagina has a separate sheath of its own, as the crus of the clitoris has also, both of which are cut across. This fact

alone would indicate that both were composed of erectile tissue.

"From the diagrams and text of this article some deductions may be drawn which are applicable in many ways.

"Removal of tissue about the vulva would sever the small terminal branch of the superficial perineal artery, which might require ligation. It might also loosen the attachments of the deep layer of the superficial perineal fascia, and thus disturb its functions; while inflammation might, moreover, extend upward from the pudendal sacs to the region of the inguinal canal.

"The close proximity of the vaginal bulbs to the vulva, and the enormous collateral venous circulation which exists between the perineal veins and the intra-pelvic venous plexuses, might create alarming hemorrhage during an operation, or produce a granulating wound which it would be difficult to close with a firm cicatrix. This applies especially to the nymphæ.

"The perineal body can be divided in the median line with scarcely any hemorrhage. Its vascularity increases as you pass outward toward the rami of the pubes and ischium.

"Constriction of the vulvo-vaginal ring is produced chiefly by the looped fibres of the pubo-coccygeus muscle, and not by the bulbo-cavernosi muscles, as commonly taught. The term 'sphincter vaginae' is improperly applied, therefore, to the latter muscles, because they are clearly analogous to the accelerator urinæ of the male, and also because such a function is not sustained by anatomical research. These latter muscles probably compress the bulbs and help to force an excess of blood into the clitoris.

"The fatty tissue found in the superficial layer of the superficial perineal fascia may undergo such an enormous increase as to constitute irregular tumors of the pudendum.

"No vessel of the perineum, if divided, requires a ligature at both ends except the internal pudic artery.

"Small wounds of the vulva, vaginal orifice, or vaginal walls, especially during the pregnant state, may produce death from venous hemorrhage.

"The dangers of incisions within the perineum increase as they approach the outer limits of that region, since the pudic vessels run close to the rami of the pubes and ischia, and

their branches have increasing calibre as you pass from the median line of the body outward.

"The superficial perineal artery differs in its course, size, and relations from the corresponding vessel of the male. The transverse perineal artery does not usually supply the vulvo-vaginal glands, as is commonly stated.

"The vulvo-vaginal glands seem to lie, in some instances, posterior to the deep perineal fascia, while the glands of Cowper, which are their analogue in the male, are situated between its two layers. In others they were found to be identical, as regards their situation. Cunningham believes that this is to be considered as normal.

"The levator ani muscle cannot be perceived in a dissection made from the integumentary surface inward until the superficial layer of the superficial perineal fascia is cut away, and the excess of fat which fills the ischio-rectal fossa as well as the perineal prolongation of the obturator fascia are likewise removed. It is seldom injured, therefore, in surgical procedures in the region of the female perineum, although it may be involved in superficial incisions posterior to the bis-ischiatic line.

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## ON MASTURBATION AS AN ETIOLOGICAL FACTOR IN THE PRODUCTION OF GYNIC DISEASES.

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BY

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(Continued from page 458.)

### CASES.

1. —, aged thirty-four, had long suffered from a variety of symptoms which might be classed under the term hysteria. She complained, in addition, of menorrhagia and pain in the back about the level of the sacrum. She was also affected with bleeding hemorrhoids which it was thought advisable to remove, and when she was under chloroform for this purpose the following condition was found. With the patient on the side and the legs close together the labia minora were readily visible, projecting in puckered folds from between the labia majora. They measured from base to free border fully two and three-quarter inches, and while, next the vulva, they preserved almost intact their usual appearance, the outer



projecting portions were dry, brown, and scaly. On separating the limbs, the whole external parts had an exaggerated, loose and voluminous appearance, the clitoris being especially prominent. The hymen was perfect, but stretched very readily, and was torn in the course of the operation to allow of the rectum being turned out from the vagina. The vagina was especially large, lax, and roomy, and the uterus was in a position of pure retroversion; though it was most freely movable, and in fact could be thrown into almost any position, though it had a decided tendency to become again retroverted.

This patient admitted, to the extent of not denying, the practice of masturbation when she was accused of it, and, while she was cautioned against its continuance, the evil effects it had had upon her health were pointed out to her. Over two years have now elapsed since then, and during that time she has enjoyed much better health than she formerly did, while the hysterical attacks and attacks of vomiting have now almost entirely ceased.

2. —, aged twenty-seven, consulted a surgeon on account of pain on defecation. On his examining the rectum, and finding the uterus projecting against it, he sent her on to me. The external parts were altered much as in the former case, but not to such a degree. The clitoris was somewhat displaced upwards, and its prepuce had the appearance of being much larger than usual, or than was necessary to inclose the clitoris. The hymen was torn, the vagina was firm and resilient, and the uterus was retroverted. She was carefully questioned with the object of ascertaining whether she had ever had an abortion, but menstruation had always been regular both in interval (twenty-eight days) and duration (three days). She complained of a frequent irritation of the external parts which compelled her to scratch and rub them, and while she was being questioned it was evident from her manner that she knew the sexual nature of these feelings. Appropriate advice was given her; the uterus was replaced and retained in position by means of an Albert Smith pessary, the narrowness of the inlet not allowing room for the broad end of a Hodge.

During the past two years she has frequently presented herself for the purpose of getting the instrument attended to. She states that she has obeyed the directions given her, and there certainly is a degree of restoration to the normal appearance on the part of the external organs. A few months ago she brought the pessary in her hand, it having been forced out at stool the previous day. On examination the uterus was found in its normal position, and, though the instrument was reintroduced, I have good hopes that, before long, she will be able to dispense with it.

3. —, æt. twenty-eight, found it necessary while in Edinburgh on a visit, to have a pessary which she wore removed, but she was "so tender that an anesthetic had always been given on these occasions." When she was chloroformed, and a huge cradle sort of pessary had been removed, the following condition of parts was found. The smaller labia were enormously enlarged and hung

down like a spaniel's ears. The clitoris, which was large, was displaced forwards, thus affording a longer base to the labia minora. When the buttocks were separated, the external parts seemed to occupy an area proportionately much greater than usual, and instead of the rosy color presented in the cases we term normal, there was a livid, mottled appearance, blue, slate, and copper colors being all mixed through each other. The surfaces of the labia were covered with numerous convex watchglass-like, or warty-looking projections, dry, and somewhat scaly. The mouth of the vagina was particularly moist, the hymen was gone, as might be expected from the treatment she had been subjected to and the size of pessary found, the vagina was very capacious and almost admitted the closed fist.

So convinced was I of the nature of this case, that, instead of making any inquiries of her, she was boldly accused of masturbation, which she at first feebly denied, but subsequently tacitly admitted by saying that she did not know that she was doing herself any harm by it. While of a decidedly sensual appearance, she had none of the hang-dog manner with averted eyes so characteristic of the habitual male masturbator, but was, on the contrary, a plump, healthy-looking, and attractive girl who mixed freely in society, and took a great interest in church matters. Of her subsequent history I know nothing.

4. —, aged eighteen, suffered from almost constant pain in both groins and in the back, aggravated at her periods, from menorrhagia and leucorrhea. She came under observation on account of the pain caused by a pessary which she had worn for a year. The external parts were altered much as in the previous cases. The hymen was split in one or two places, and this may have been caused during examination, or by the introduction of the pessary, as she denied ever having had sexual intercourse, nor was there any history pointing to the occurrence of a miscarriage. On removing the pessary, the uterus was found retroverted and perfectly movable, and both ovaries were prolapsed, tender, and slightly enlarged. She stated that she suffered from frequently recurring itchiness of the vulva, which necessitated her scratching herself, but that this only made matters worse. From her manner it was evident that she knew the real nature of this irritation, and on being taxed she virtually confessed that she masturbated. As she had come to the infirmary from a considerable distance, she was admitted. The pessary was not replaced. Bromide of potassium and belladonna were administered with a view, if possible, of diminishing the sexual excitability, and she was told that this scratching herself kept up her illness, so she then promised not to repeat it. The nurse was directed to dust her vulva every morning thickly with ordinary dusting powder, and, for purposes of comparison, that of another patient in the ward, a married woman, and the two cases were examined every second or third day at the noon visit. The difference between the two cases left no doubt that she was not acting up to her promise. After watching her for some weeks it became evident that, notwithstanding frequently

repeated good advice and warnings, she intended to persist in her practices, and she was consequently dismissed unimproved, and I was not surprised to hear at the end of a year that she was still in statu quo.

5. —, aged thirty-five, suffered from aphonia, recurrent cataplexy, and a variety of symptoms evidently of a hysterical nature, as also from tenderness in the groins and some leucorrhea. She was examined at the request of one of the physicians to the Infirmary to ascertain the condition of the ovaries. At his advice, chloroform was administered. The labia minora and clitoris were decidedly increased in size; the hymen was perfect, and allowed only the introduction of the little finger; the vagina was roomy and voluminous. On examination per rectum, the uterus was found retroverted, but the ovaries were not felt.

No communication could be held with this patient, so that we have only the above facts upon which to form our opinion. I have classed her among masturbators on account of her emotional, hysterical temperament, and the condition of her vulva.

6. —, aged twenty-eight, had been for years in the hands of various gynecologists. Ultimately she consulted Dr. Angus Macdonald, and stated that she required to wear a support to keep the womb in position, but that none of the instruments which had been employed would remain in position. She was found to suffer from pronounced retroflexion of the uterus with marked prolapse, and enlargement and prolapse of both ovaries. Going upon the lines laid down in this paper, the existence of masturbation was recognized with absolute certainty. Dr. Macdonald was no more successful than his predecessors in arranging an instrument which would "remain in," and, as the perineum was intact and there seemed no valid reason why pessary after pessary should be expelled, it was suspected that the patient herself removed them. She got into the habit of coming so often to get herself attended to, and showed such evident anxiety on each occasion to be examined, that, notwithstanding the necessity for it, all local treatment was abandoned, and soon she disappeared, probably to put herself under the care of some other doctor.

7. —, aged thirty-six, was sent by her doctor in the country with a note, stating that he had exhausted his patience and his resources in trying to relieve her, but without success, and that he had used numerous pessaries, but had not hit on one that would remain in position, or rather, he thought, that was allowed to do so. Besides suffering from a variety of symptoms, which might quite well be described as hysterical, she complained of pain in the back, in the groins, and "in the womb." About the condition of the womb she was very decided, stating that it was swelled and that it did not lie straight. On examination, the uterus was found to be completely retroverted and so perfectly movable that it was with ease turned into almost any position, where it would remain for a little, but from which it soon re-



turned to a state of retroversion. Both ovaries were enlarged, prolapsed, and tender. The labia minora were elongated and discolored. The clitoris was as large as the little finger, and was very sensitive. On making an examination, the lower part of the vagina suddenly clasped closely around the examining finger, but on this spasm subsiding—which it did in the course of a less than a minute—the vagina was found to be extremely loose and roomy. On being questioned as to the existence of any irritation about the vulva, she smiled, and replied that there was none now, but there used to be a good deal. As from her condition and her appearance this statement was doubted, we had her carefully watched, and dusting powder was applied as in Case 4, when it was found that, if her vulva did not trouble her, she troubled it, so on one occasion blistering fluid was painted over the clitoris. When she was questioned some days subsequently as to whether this had done her any good, she laughed openly and somewhat sarcastically, and said she would like now to go home. Treatment directed to the improvement of her nervous system had been adopted, and the use of opium, to which she was accustomed, was forbidden; but when her friends, who were full of sympathy for her, were removing her, it was found that they had systematically smuggled in opium for her use.

This was, perhaps, the most aggravated and hopeless instance of masturbation that has come under my observation, and her doctor informs me that to this day she has not improved in the very slightest.

8. —, aged thirty-four, came to the Edinburgh Infirmary from a distance of some three hundred miles for advice. She complained of pain in her back and groins, worst at the menstrual periods, which was so severe as to prevent her doing any work. On pressure over the left groin, pain was experienced. Per vaginam there was found a fairly good hymen. The vagina was lax and short. The body of the uterus was retroverted, not fixed and not enlarged. The right parametrium was clear, and the right ovary was not felt, but that on the left was enlarged, tender, and somewhat prolapsed. The external parts were moist, and of a deep-red hue, the labia minora were considerably more prominent than usual, and the clitoris was enlarged and very sensitive. On being questioned, she admitted the habit of masturbation.

9. —, aged twenty-eight, had suffered for seven or eight years from pain in the back and down the left leg and from leucorrhœa, with too profuse flow at the menstrual periods. The uterus was found upon one occasion to be retroverted and perfectly movable, and on another occasion, some months subsequently, to be anteverted; when, however, it was with ease thrown backwards and again brought forwards. The appearance of the external parts was almost exactly what has been described in this paper as characteristic of external masturbation, and, while she

denied that she ever practised such a habit, she volunteered the statement that she knew quite well what was meant when she was asked if she suffered from any irritation of the vulva, but that she was not in the habit of doing anything to herself.

10. —, aged twenty, was sent by her doctor from the country with a note saying that the case had given him considerable trouble, but that he had never been permitted to make a vaginal examination. She had for two years suffered from constantly-recurring pain in both groins, especially the left, and had been treated with tonics and bromide of potassium, and locally by means of blisters, which always gave temporary relief. On examination per rectum—as the hymen was found to be persistent—the left ovary was felt somewhat low-placed, apparently somewhat enlarged, and exquisitely tender. The right ovary was not felt. The uterus was natural in position, and, as far as could be made out, was slightly enlarged. The external parts presented, though not to a very marked extent, the appearances already described as being associated with masturbation. She admitted the practice, but professed ignorance as to its real nature. She was an intelligent, frank, innocent-looking girl, and readily promised to avoid its repetition when the damage she was doing her health was pointed out to her. She was retained in hospital, blisters were applied to the groin, and fifteen grains of bromide of potassium, with five minims of tincture of belladonna given thrice daily. The same method was employed to ascertain whether she was keeping her promise or not as in Case 4, and I have every reason to believe that she did give up the habit. During her stay in hospital she improved markedly, being soon entirely free from pain except during a menstrual period, and this improvement has now lasted a year.

11. —, aged twenty-two, a well-built, stout, rosy country girl, presented all the signs and symptoms of oöphoritis. She complained, too, that her womb came down, and required to be kept in place by an instrument. This was found to be a soft rubber ring (Galante), and on its removal the uterus was found to be somewhat low-placed in the pelvis, apparently increased in size and slightly anteverted. The sound entered two and a half inches. The external parts were most characteristic of the class of cases under consideration. The clitoris was large, and the labia minora were hugely increased in size. The hymen was gone, and the vagina, though large and roomy, was not relaxed to the extent noticed in Cases 1 and 3, for instance. She stoutly denied the practice of masturbation, but denied it in a manner as though she were prepared for the accusation, and, as a result of observation while she was resident in the Infirmary, we had good grounds upon which to suspect her.

Notwithstanding treatment, she left unimproved.

While I was in the country during the holiday season some months subsequently, a medical friend asked me if it would inter-

est me to see a girl who had recently come into his district who had, on the front of the vaginal portion of the cervix and spreading into the vagina, an irregularly-shaped ulcer about three-fourths of an inch in diameter. I found that the girl was the one whose case has just been given, and that my friend had pretty good data upon which to found what was his opinion, namely, that she masturbated, and that by means of some foreign body, which had mechanically caused the ulcer or abrasion in the vagina.

In a letter dated six months subsequently to the time I saw him, my friend states that "The ulcer is still present, but does not increase in size. It is about the size of a shilling, occupies the upper part of the anterior lip of the uterus and a small part of the vaginal wall in front of it, feels hard and gristly, with an irregular surface, and is not sensitive. The discharge is very little, and not offensive. The color is that of a healthy sore, with a thin covering of pus. Under the use of injections and cleanliness, the sore, if not healing, is certainly not getting worse." Further, he states that he sees no reason to change his opinion in regard to the girl's habits.

12. —, aged twenty-four, suffered from menorrhagia and pain in the back and groins, which was aggravated at the menstrual periods, as also from pain on defecation. The hymen was persistent, but split in two or three places. The vagina was particularly lax and roomy. Both ovaries could be felt. They were somewhat enlarged and very tender, and were situated low down behind the uterus, which latter was in its normal position.

13. —, aged nineteen, was a fellow-servant with the preceding girl, No. 12, and sought advice at the same time. She altered twice, with an interval of three months between the times, at the age of seventeen. Since then, she had not altered, and she wished to know the reason for this. On examination, it was found that the cervix was represented by a mere button-sized projection on the roof of the vagina, and that the cavity of the uterus measured little over an inch and a quarter in length. The ovaries were not felt, the external parts were greatly increased in size, the hymen was entirely absent, and the vagina was large. These two girls stated that they occupied the same bed, and they admitted the habit of mutual masturbation.

14, 15, 16, and 17. These four cases may be classed together, for all of them complained of menorrhagia and pain in the groins, at the menstrual period, with leucorrhea between the times, and in none of them was there any change in the uterus or ovaries made out, while in all there were such decided and characteristic changes in the appearance of the external organs of generation as have already been so frequently described. The occupation of three of the girls was working the sewing-machine, and that of the fourth attending to a net-weaving loom. This latter is entirely worked by means of peddles, six or eight of which of different heights (one, two feet, or more) having to be moved before each journey of the shuttle through the web. They all stated that



their work occasioned an irritation about their genitals—by one described as pleasurable—and they all admitted that, out of work hours, they frequently had recourse to scratching themselves in these parts.

18. —, aged eighteen, was examined at the request of one of the physicians to the infirmary on account of the presence of a profuse leucorrhœal discharge and of menorrhagia. The external parts were somewhat increased in size, swollen, and intensely congested; the discharge was purulent, and the appearances resembled those seen in the acute stage of gonorrhea, but the possibility of such a condition being present was negatived by the length of time she had been confined to bed in the hospital, and the opinion was therefore hazarded that she masturbated. The resident physician, under whose charge she was afterwards, assured me that this opinion was correct, as she had been repeatedly seen to do so. As she suffered from double optic neuritis and was blind, it was easier to have her watched than is usually the case. Her symptoms pointed to the presence of a cerebral tumor, but when an opportunity for pathological examination was afforded, there was found to be considerable serous effusion in the ventricles and cavity of the arachnoid.

19. —, aged eighteen, suffered from frequency of micturition and great pain in the bladder, the cause of which was easily ascertained to be the presence of a large stone. Her vulva presented so characteristically the signs which we have held in this paper as being associated with masturbation that Dr. Angus Macdonald preferred and performed the operation of vaginal lithotomy rather than that of lithotripsy, fearing the presence of a foreign body as the nucleus of the stone, notwithstanding her repeated assertions that this was impossible. The stone was found to be very large, and transfixing it, with from half an inch to an inch of freely projecting end on either side, was an ordinary hair-pin. Even when shown the cause of her trouble, the only explanation she would offer was that some time before, while dressing and holding some hair-pins in her mouth, she had got a sudden fright, and perhaps she might have swallowed one. Some months after her recovery, however, the nurse of the ward who had befriended her betrayed her confidence by informing me that she had confessed to having lost the hair-pin while scratching herself with it some fifteen months previous to her admission to the hospital. She also admitted the practice of masturbation.

The hymen in this case, previous to operation, was perfect, though elastic and dilatable, like a piece of India-rubber, and the vagina was very lax and capacious. The uterus was retroverted; but I have not classed this with the other cases of retroversion, as the displacement might have been caused by the presence of the stone.

This case is fully reported by Dr. Angus Macdonald in the "*Transactions of the Obstetrical Society of Edinburgh*," vol.

vi., and in the *London Medical Press and Circular*, August, 1881, under title, "Calculus in the Female Bladder."

20. —, aged twenty-six, had been married for six months. She had suffered and been treated for cystitis for three months. At the end of that time she presented herself at the infirmary, complaining that she was always getting worse. On making a local examination, the cause of the trouble was found to be the presence an irregularly rod-shaped foreign body, which lay transversely to the axis of the urethra across the base of the bladder, and was there pretty firmly fixed. The urethra was dilated, and the forefinger introduced, and by the aid of a pair of vaginal forceps there was removed a piece of wooden lead pencil two and three-quarter inches long, entirely encrusted with stony matter. Recovery was uninterrupted. She denied all knowledge of the pencil, and I was at a loss to understand the case. She was married, and from the duration of her symptoms, and the appearance of the pencil, it seemed probable that it had been introduced after marriage. Her labia minora were redundant enough to awaken suspicion, but I thought that there might be an analogy between this condition in her case and the long prepuce of boys suffering from stone. I did not press questions upon her, and after her leaving hospital I saw no more of her for six months, when she presented herself complaining of a return of the frequent micturition. The diagnosis was again easy; she was four months pregnant. Overjoyed at hearing this, she readily responded to my request that she should tell me all about the lead pencil. During the first three months of married life, her husband did not succeed in effecting penetration, although matters had been facilitated for him by the previous rupture of the hymen. He complained that she was wrongly made, and in addition to his abortive attempts at connection, which closely resembled masturbation, he actually practised masturbation upon his wife. On one occasion, bent on discovering what the fault in his wife's parts was, he carefully inspected them, and, seeing an opening, he essayed to measure its diameter with a piece of lead pencil which, however, slipped from his fingers, and disappeared.

The interest of this case to me is that, as a result of the treatment to which this woman was subjected, her vulva came to resemble those of the previous cases.

*Retroversion. Cases 1 to 9.*—The frequent occurrence of retroversion is perhaps the most striking thing in this series of cases. Retroversion in children is a thing unknown, though the records of post-mortem examinations on them in hospitals and elsewhere are copious enough. Hence we are forced to the conclusion that this displacement is always acquired. To account for its occurrence in the married, we have many causes—principally connected with child-birth and abortion—but when we

eliminate from the cases in the unmarried all such as may have had their origin from similar causes, there still remains a sufficiently large number of instances—of which all ours are examples—to render the question of their etiology one of practical importance and utility.

It is needless here to enter on the consideration of the much-vexed question of the uterine supports, suffice to say that perineum, vagina, connective tissue, ligaments, and peritoneum, all assist, in greater or less degrees, in retaining the uterus in its normal position of anteversion (in relation to the axis of the pelvic inlet), with, in most cases, a slight degree of ante flexion, while they permit a limited amount of movement—necessary on account of the presence and functions of the bladder and rectum. Now, should the more essential of these supports be so diminished in strength or reduced in tone as to render them useless for this special function, then the uterus will be left at the mercy of the intra-abdominal pressure, will be freely movable in almost any direction, and, as can be readily understood, will be very likely one time or another to have the intra-abdominal pressure, during straining, brought to bear upon its anterior instead of its posterior wall, and, as a consequence, to be thrown into a state of retroversion. This “want of tone” we have already noticed in considering the condition of the external parts; but a consideration of some of the foregoing cases shows that the same want of tone exists in the vagina and other uterine supports in many masturbators. Hence we find an explanation in the large, loose, and lax vagina noted in several of the cases where there was no ground to suppose that any means of mechanical dilatation had been employed, notably in Case 1, where the hymen was perfect. Since noticing these facts, however, I have found all that I would have said in this connection so clearly put by Hildebrandt in No. 5 of “*Volkmann's Sammlung Klinischer Vorträge*” on “*Retroflexion of the Uterus*” that it will be better to quote his words than to try to say the same thing in mine; with, however, this remark, that, as far as I understand my experience, it quite corresponds with his.

“There occur among women several debilitating causes which lead to such a total relaxation of the genital organs that not only the uterus and the vagina, but also the constrictor cunni, the levator ani, and the perineum give evidence on examination of



abnormal muscular atrophy and of a decided diminution of tone of their associated connective tissue—a condition of relaxation in which the uterus at first frequently changes its position and form, but ultimately usually tumbles backwards, and then bends to form an acute-angled retroflexion.” (This final stage was only noticed in one of the above cases, the others having pure retroversion.) “This condition of relaxation is met with most frequently among women married to men of deficient relative sexual power, most strikingly and decidedly among girls who practise masturbation, but not unfrequently also among women who have nursed their children too long—two or three or even four or five years, as I have occasionally seen. These latter cases result from the excessive activity of the breasts and consequent anemia of the pelvic organs, the former from repeated overirritation of the nervous system and consequent muscular weakness. . . . As an indication of the relation between retroflexion and masturbation, it may be useful to state that in twelve young women in whom it was proven that masturbation was the cause of their complaints, and whose cases I have recorded in my private journal for 1867–8, seven of them suffered from well-marked retroflexion.”

From such considerations, then, and from the fact of our being able to exclude in each of the above narrated cases any such cause as previous abortion or confinement, or the existence of a fibroid in the posterior wall of the uterus, causing it to topple backwards, or, indeed, any of the ordinarily-stated causes for backward displacement, the conclusion is warrantable that in the foregoing cases the masturbation and the retroversion stood to one another in the relationship of cause and effect.

*Prolapse of the Uterus.*—A heavy uterus no doubt tends to sink somewhat below its usual level, and as we have seen how masturbation leads to engorgement of the uterus, it would seem likely that under such circumstances a degree of prolapse might be occasioned. This, however, is only noted in two of the foregoing cases and in No. 11 it was not very pronounced. In No. 6, which was under Dr. Macdonald's care, the condition was distinct enough, and in his opinion there was no doubt of the causal connection between it and the habit in question. PUILLET mentions a well-marked case, as does also DESLANDES. In that reported by the latter writer there was also hypertrophic elongation of the cervix. In the number of this JOURNAL for April,

1882, under the title of "An Aggravated Instance of Masturbation in the Female," Dr. H. R. Bigelow relates how, in a case under his charge, the uterus was found low down and the cervix enormously hypertrophied and almost protruding. Any sceptic as to the occurrence of masturbation in women will have his doubts rudely shattered by a study of this truly aggravated case. Dr. Bigelow also briefly but saliently touches upon the main points as to the causation and the treatment of the habit. As a consideration of these points is outside the limits of this paper as set down in the title, we would refer those interested in the subject to Dr. Bigelow's paper for information in these respects.

*Affections of the Ovaries.*—The great frequency with which pain in the region of the ovaries occurred in the foregoing cases leads us to inquire into the causation of ovarian pain in general. Matthews Duncan<sup>1</sup> describes three great causes for ovarian pain—1st, ovarian irritation or neuralgia, "characterized by absence of every sign of disease and of every regular symptom except pain in the region of one or other ovary." He expresses himself, however, as very doubtful of the neuralgia as being the final or true pathology of the disease. 2d, he states that there are "some cases which are not inflammatory, and yet which are certainly more than merely neuralgic," though there may be in such cases slight enlargement and tenderness of one or both ovaries. Dr. Duncan believes that there is no inflammatory process, because the affection occurs so frequently in women who are in blooming health and who are not benefited by antiphlogistic treatment. 3d, cases of undoubted inflammation of the organs. Emmet<sup>2</sup> expresses a doubt as to the pain being in many cases of ovarian origin at all, and states that a woman seldom suffers from ovarian neuralgia without at the same time giving evidence of uterine disease, thereby apparently meaning that a pain may be felt in the ovary as a result of disease elsewhere, just as occurs in many other parts of the body, and to which so much attention has been drawn by Hilton in his delightfully interesting book on "Rest and Pain." In view of the scarcity of opportunities for pathological investigation in such cases, the matter must remain undecided and open to the uncertainties of varying clinical observation and theorizing. One of the above cases (No. 18) died, and the opportunity was taken

<sup>1</sup> Clinical Lectures on the Diseases of Women, 1879, lec. iv.

<sup>2</sup> The Principles and Practice of Gynecology, 1879, p. 747.

xaming the ovaries. They were found somewhat enlarged and slightly cystic, but as she had not complained of any special pain, the observation is without value as bearing on the present question.

It is sufficient, however, to note the frequency with which, in the accompanying cases, "ovarian pain" was a prominent symptom, and that in some of them there were grounds for establishing a diagnosis of ovaritis. Only one case (No. 10) remained long enough under observation to give distinct evidence of the causal character of the masturbation. She had previously been under treatment with blisters and bromide of potassium, quinine, etc., for many months, and under this she had frequently improved, but always relapsed each time with an aggravation of her symptoms. An exactly similar line of treatment was adopted, but in addition she was warned of the danger of her interfering with her sexual parts, and this warning, we have reason to believe, was sufficient to prevent her doing so. From that time to this, now fully a year, she has remained free from pain, except to a slight and really not abnormal extent at her monthly periods.

The fact that masturbation may be a cause of ovaritis or of ovarian pain is not alluded to in the great majority of gynecological text-books. Galabin,<sup>1</sup> however, mentions it as follows: "Masturbation is undoubtedly one of the causes of hyperemia, both of uterus and ovaries, but is much less common than in the other sex." Emmet<sup>2</sup> does not include it in an eloquent paragraph descriptive of the various combined moral and physical causes which may give rise to what has been termed irritable ovary, and from all of which he says the nervous system has been first abused, and then nutrition has suffered, some accident only locating the effects in the ovary. Masturbation would seem a most likely cause to operate in such a way, but its effects on the ovary probably result more directly than by accident.

The explanation of how masturbation affects the ovaries is simple if we accept the statements made earlier in this paper of the abnormally-prolonged physiological congestions occasioned by the habit. Long-continued and repeated attacks of hyperemia of other organs are well known to give rise occasionally to actual inflammation, with production of new fibrous tissue, and analogy would point to this as one factor, at least, in the pro-

<sup>1</sup> The Student's Guide to the Diseases of Women, 1881.

<sup>2</sup> Loc. cit., p. 752.



duction of ovarian pain in the class of cases under consideration. Another cause will probably be found in the nervous exhaustion occasioned by the too frequent occurrence of sexual excitement. In men, pain in the back is a frequent phenomenon under similar circumstances, and perhaps in women the ovary may be the seat of this fatigue pain. Or, again, the pain may be referred to the ovary from some mischief set up in other parts of the genital apparatus.

However we may explain it, the fact remains that pain in the groins, probably referable to the ovary, is of frequent occurrence in those addicted to masturbation, and that little good need be expected from its treatment if attention be not paid to the presumptive cause.

*Prolapse of the Ovaries.*—Prolapse of the ovaries does not occur as an independent lesion, but as a result of changes either in the ovaries themselves or in the surrounding organs. They are not fixed in any definite position as are, for instance, the kidneys or the spleen, but are capable of considerable movement, dependent on the condition of the bladder and rectum, just as is the uterus. They are not hung or supported by any special ligaments, but rather retain their level as a result of the close coaption existing between the various pelvic contents under all conditions, and also, of their specific gravity. Thus they may be said to float in the pelvis, and to be prevented from floating too far away from the uterus by the broad ligaments which keep them from ascending and from passing outwards. They are usually felt by bimanual examination at about the level of the os internum and about one inch outside the border of the uterus. Any cause which materially increases their specific gravity, even though it does not increase their size, will tend to make them sink below this level, and conversely, they may be increased in size, and have no tendency to prolapse, but rather to pull on their anchoring attachments to the uterus when their specific gravity is diminished, and consequently the normal balance between their weight and the coaptive force of the pelvic viscera is destroyed.

The circumstances which lead to the first-mentioned condition are principally inflammation with increase in the quantity of fibrous tissue in the organs, and, as we have seen while considering the immediately previous group of cases, there is ground to suspect that such changes do occur as a result of masturbation, it naturally follows that in a proportion—cer-

tainly a small one—of individuals affected with the habit pro-lapse of the ovaries may be looked for.

*Affections of the Uterus, Metritis, etc.*—In the cases given above, there is little mention of the condition of the uterus further than its position. This has arisen partly from the difficulty experienced when dealing with such individuals as are referred to in estimating the reality of pain when complained of during a physical examination. As a rule, such patients are of an unstable nervous temperament, and tend to become especially excited while being examined, so that they either magnify the inconvenience of the examination into actual suffering, or greatly exaggerate any little pain which may be occasioned. Nor can I say that in any of the cases related were there sufficient grounds upon which to establish the diagnosis of metritis, except in some of those affected with retroversion, but in them the disturbance of the ordinary circulation produced in the uterus by its displacement was probably sufficient to explain the condition. Metritis has been noted as a direct consequence of masturbation by Deslandes, Pouillet, Jozan, and others; but it may be as well here to state that in the French works on this subject there is a vagueness of statement and apparent tendency to exaggeration which greatly interferes with their value as authorities. An exception to this may perhaps be found in the recent writings of Martineau, which I have not yet had an opportunity of examining, but of which I have heard from one who has recently attended Martineau's clinics. I have, however, had more than one occasion to note the existence of very pronounced metritis in women upon whom marital frauds had been practised, which aimed at the prevention of the admission of seminal fluid to the uterus. As has already been shown, such cases alone have any resemblance to masturbation, while checks aiming at the destruction of the vitality of the spermatozooids probably cause disease—when they do so—in a totally different manner. Goodell states that he has seen cases of great turgidity of the womb occasioned by the use of checks. Bergeret records nine cases of acute metritis, with two deaths, from a similar cause, while West accuses "the imperfect performance" of sexual intercourse as one of the frequent causes of uterine engorgement.<sup>1</sup>

Having regard to the already described physiological effects

<sup>1</sup> See Goodell, op. cit., Lesson xxxiii.

both of masturbation and of the use of such checks, it is not too much to suppose that many cases of metritis in the unmarried and in the married may have their origin from one or other of those causes, and the importance of bearing this in mind when treating such cases cannot be overestimated.

*Affections of the Cervix.*—All that has been said in regard to engorgement of the body of the uterus may equally well be applied to the cervix. In addition, hypertrophy has been frequently noted, and has been ascribed to similar causes as those spoken of as occasioning metritis. Erosions around the outer os are also referred in many cases to similar causes by some of the writers already cited. No sufficiently well-marked case of cervical affection has come under my notice to warrant its being recorded; but arguing from analogy, I see little reason to doubt their occurrence. A degree of softness, especially around the outer os, has been noted as present in several of the foregoing cases, but I would again repeat that I regard this as of a temporary nature and as a production of sexual excitement, and not as being a permanent condition.

*Catarrh of the Uterus and Vagina—Leucorrhea.*—In the majority of the above cases, the presence of leucorrhea is mentioned, and the occurrence of additional discharge at the time of examination is referred to, and has been explained. No attempt was made in any of the cases to ascertain the possibility of an endometritis being the cause of the leucorrhea, though probably this condition may have been present. The reason for this was partly on account of an unwillingness to meddle much locally with, or to attempt local treatment of, patients suspected of the habit in question, and partly from a conviction that the removal of the exciting cause might prove sufficient to lead to the disappearance of the pathological condition, while it was also thought that, in the event of the habit not being given over, local treatment, even if immediately successful, would only cause very temporary improvement.

I am not fully prepared to justify this line of action, because none of the cases were sufficiently long under observation (many of them only presenting themselves on one or two occasions) to give reliable data upon which to found; but, as a rule, I would say that it is advisable to avoid local treatment or frequent examination in such cases.

The occurrence of leucorrhea in masturbators is mentioned by



almost all writers who refer to the subject, notably by Atthill,<sup>1</sup> who notices cases in which the cause was ascertained to be vaginitis, and others in which very obstinate endometritis was found.

The ordinary causes of leucorrhea are connected with the married condition and the occurrence of parturition, so that the presence of whites in the unmarried is of much less frequent occurrence than in the married, and in them a different causation must be looked for. Taking the cases given into consideration, I would say that the existence of leucorrhea in an unmarried nullipara, especially if in addition menorrhagia be present, is sufficient to warrant a very decided suspicion that masturbation is being practised, provided, of course, no other distinct and evident cause be discovered.

*Affections of Menstruation.*—Menorrhagia would appear to be of frequent occurrence among female masturbators. Tissot states that menstruation may be very variously affected, but remarks on the frequency with which the flow becomes profuse, sometimes so profuse as to amount to a "veritable hemorrhage." In addition there often occur slight discharges of blood between the periods. Of course, it is easily understood how such constant losses or other ordinary causes may render a girl who masturbates so anemic that amenorrhea results, but it would seem that the tendency of the habit is to produce increase in the quantity of the menstrual flow, and that this should be so is easily understood when the prolonged congestion of the pelvic viscera occasioned by the practice is borne in mind.

*Affections of the Vulva.*—Attention has already been drawn to the alterations of the vulva found in the class of patients under consideration. Probably a slow inflammatory process is the cause of the so frequently occurring hypertrophy of the labia minora, but an inflammatory action of a much more pronounced character was evidenced in several of the cases. As stated in the earlier part of this paper, the amount of congestion of the vulva will depend very much on the frequency, vigor, and recentness with which it has been subjected to manipulation, but in case 18 this condition had passed beyond mere congestion—there was very marked inflammation of all the external parts, with numerous excoriations and profuse discharge of purulent matter. Deslandes notes a similar condition as having been repeatedly found under similar circumstances. The causation, of course, is probably purely mechanical.

<sup>1</sup> Op. cit., Sixth Edition, p. 29.

*Affections of the Bladder.*—That foreign bodies occasionally find their way into the female bladder is within the experience of most gynecologists, and few will deny that it is while women are subjecting themselves to sexual excitement that such articles as hair-pins, pencils, crochet-needles, small keys, bits of bone, of tobacco pipes, of glass tubing, etc., etc., slip through the urethra and lodge in the bladder. Once there, they soon set up cystitis, become incrustrated with calcareous matter, interfere with micturition and cause very great uneasiness. The paper already referred to by Dr. Angus Macdonald on Calculus in the Female Bladder deals fully with this class of cases and will well repay its perusal. When a woman presents herself with a stone in her bladder, the possibility—nay the probability—of some foreign body forming the nucleus round which deposit has occurred should always be taken into consideration when choosing between the operations of lithotomy and lithotripsy, and the appearance of the external parts may afford valuable aid towards determining a decision. The history of case 19 is, in this connection, of especial value. As the girl was considered to be a chronic masturbator, the operation of lithotripsy was discarded, notwithstanding the great ease and rapidity with which it can be carried out in the female, and the more difficult and dangerous operation of lithotomy was performed instead. Had the former been attempted, the injury to the bladder would certainly have been excessive, as during the crushing process the sharp ends of the hair-pin would undoubtedly have torn the walls. The nature of the body present in case 20 rendered its removal through the urethra feasible and easy, but it must be borne in mind that the urethra is only capable of limited dilatation with safety to its subsequent efficiency—dilatation, according to Simon, that can be gauged roughly by the index finger for adults and the little finger for girls of fifteen to twenty years of age.

Other affections of the bladder are noticed by many of the French writers—incontinence, nocturnal incontinence, frequency of micturition, etc.—but I have never been able to establish their connection with the practice of self-abuse. Retention I have seen occur, resembling ordinary hysterical retention, but it yielded to time without the use of the catheter.

One lesson may be learned from the histories of such cases as Nos. 19 and 20, in regard to the extent to which this class of

patients will perjure themselves, as may be seen by referring back to the reports.

*Mechanical Injuries to Internal Parts.*—Keeping mere scratches of the vulva and inlet out of consideration, there is only one case—No. 11—which requires comment under this head, nor would I be very positive in regard to it. French writers frequently refer to ulcers in the vagina and on the cervix caused mechanically; but in this country—Scotland—internal masturbation appears to be of such rare occurrence in comparison with the external form that the chances of mechanical injury being inflicted on the internal parts by such means must be few, so that further consideration of such injuries, in view of the doubtfulness of the single case under consideration, would be of little value.

It will be seen that in considering the effects of masturbation in women on the condition of the genito-urinary organs, care has been taken to keep within the limits of the cases cited. These cases, as has been already stated, have been selected on account of the absence of any other cause than masturbation capable of occasioning the pathological conditions found in them. They are by no means the only available instances where there were good grounds for associating the presence of the habit with changes in the pelvic organs; but it so often occurred that, either from the patients being married, or having had children, or practising prostitution, or from various other causes so many elements of uncertainty as to etiology were introduced, that it was thought better to entirely omit their mention, and only to record the cases where, in the absence of ordinarily recognized causes for the production of uterine disease, masturbation was the presumable *fons et origo mali*. At the same time it must be distinctly understood that it is not alone in those ostensibly virgins that masturbation leads to local organic mischief, and we must be prepared occasionally to recognize the existence of the habit in wives and widows, and to estimate its importance as an etiological factor in the production of various diseased conditions.

It will also be seen that care has been taken in the paper to keep within the limits of its title, and to avoid even the mention of any general or constitutional effects which masturbation may exercise upon those who practise it. Indeed, this aspect of the question has already received more than the attention it de-



serves, to the almost entire exclusion of the aspect which it has been the object of this paper to elucidate. On looking through the literature of the subject, one is struck with the great fertility of imagination displayed by the majority of the writers who have essayed to estimate the evil consequences of masturbation on the system, and one is even inclined to wonder that no one has been bold enough to trace the occurrence of small-pox, measles, and other fevers to its practice. It is a melancholy fact that most of the writings on the subject resemble the brochures of advertising quacks rather than the productions of educated and observant men, and that in so many cases vagueness of statement and flights of theorizing have been indulged in at the expense of accuracy of observation and soundness of reasoning.

It has been my earnest endeavor, in writing this paper and in publishing it so far away from the locality where the cases have come under notice, to avoid the chance of being accused as I am now accusing others, and I would offer it for the consideration of the profession in the hope that it will prove of practical utility.

The following conclusions may, I think, safely be drawn from the histories of the cases related :

1st. That masturbation exists to a considerable extent in women.

2d. That it is accomplished, as a rule, by manipulation of the external parts.

3d. That its accomplishment by the introduction of foreign bodies into the vagina is in this country (Scotland) rare.

4th. That decided and constant changes of the external organs of generation result from its long-continued practice.

5th. That the presence of such changes (which are fully described in the paper) is sufficient to warrant the assumption of the existence of the habit.

6th. That by judicious questioning and the avoidance of making accusations of moral obliquity to such patients, this assumption may be strengthened and in many cases confirmed.

7th. That, apart from the use of any mechanical dilating means, masturbation is capable of producing very marked relaxation of the vagina.

8th. That retroversion of the uterus is of such common occur-

rence among masturbators, that its existence in an unmarried nullipara should always be regarded with extreme suspicion.

9th. That the same suspicion should be shown on the occurrence of leucorrhœa and menorrhagia *together* in similar patients.

10th. That ovarian pain and even chronic ovaritis may be set up by the habit.

11th. That many other affections of the female generative organs may also be thus occasioned.

12th. That masturbation has so frequently a distinct etiological connection with disease of the pelvic organs, that its recognition will often prove a valuable aid towards forming a prognosis in, and directing a line of treatment for, many uterine complaints in the unmarried.

59 QUEEN STREET, EDINBURGH, N. B., {  
April 10th, 1883. }

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THE IMPROVED CESAREAN SECTION,  
CONTAINING THE DESCRIPTION OF A KYPHOTIC PELVIS.

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(Concluded from p. 521.)

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It appears from the above-mentioned operation of Leopold that he *avoided the decidua* in putting in the stitches. The reason for this is that septic matter might find its way from the interior of the uterine cavity along the sutures. This wise precaution was already taken by Lungren in 1875, who says<sup>1</sup> that he introduced five silver sutures one-quarter of an inch from the edges of the incision and carried them *nearly* through the substance of the uterus.

In passing the sutures, I took special care to insert them in places where they would *compress the bleeding sinuses*.

Different materials have been tried for the sutures, and a definite conclusion has been reached as to the *preferableness of silver and silk*. Catgut, which for other purposes is the favorite substance among Listerians, has proved decidedly bad in the puerperal womb. Even when tied with a triple knot, the sutures were found loosened or open, or they had cut through the tissue and were found lying loose on the top of the wound, or the sutures had become softened before union had taken place. Even Mr. Lister's newly devised chromized catgut<sup>2</sup> has proved as total a failure after Cesarean section as the carbolized. It was used in a recent case by Späth, of Vienna. Particular care was given to the tying of the knots. With all allowable force the five deep sutures were tied with a treble knot. The patient lived only thirty-two hours after the operation, and yet, at the autopsy, all the sutures were found untied, and the wound gaping to the extent of six centimetres.<sup>3</sup>

Dr. Lungren<sup>4</sup> introduced in his second operation twelve

<sup>1</sup>L. c., p. 80.

<sup>2</sup>Brit. Med. Jour., Feb. 12th, 1881, p. 219.

<sup>3</sup>Ehrendorfer, in Archiv f. Gynäk., 1882, vol. xx., No. 1, pp. 107, 108, and 114.

<sup>4</sup>L. c., p. 82.



horsehair sutures, but it did not seem to possess the requisite strength and firmness.

Dr. Frank E. Polin, of Springfield, Ky., was the first who, under the influence of Marion Sims' teaching, used silver wire (1852). Silvestri found complete union by the first intention in a patient on whom he had stitched the womb up with this material, and who died thirty hours after the operation.<sup>1</sup> Dr. Polin<sup>2</sup> found, in an autopsy performed some time after the operation, the silver sutures imbedded in new-formed tissue, and so did Baker Brown<sup>3</sup> forty days after the operation. Dr. Lungren<sup>4</sup> had, in his second operation on the same patient, the opportunity to see this on the living body. He saw the sutures lying under the peritoneum as bright as when they were put in. Thus there is ample proof of the value of silver wire for the uterine suture.

But best of all is carbolized silk. It is entirely innocuous; it is passed and tied in shorter time; on account of its softness it will not irritate organs that may come in contact with it, and it becomes absorbed or coalesces, at least, with the living tissue.

Silk-worm gut is not good. It is uneven, contains weak spots, is difficult to tie, and not absorbable.<sup>5</sup>

Hemp has been used with success, but is in no respect superior to silk, and is not absorbable.

Even soft rubber, which answers such an excellent purpose as temporary or as cutting ligature, has been used for suturing the womb after Cesarean section. This was done with success in 1873 by Grandesso Silvestri. A second case, operated on by his assistant, Veyer, ended fatally. Six elastic sutures had been used. The patient died after two days, and, at the autopsy, the inner part of the uterine wall was found completely united, and would have formed a sure basis for an ultimate union of the outer part also.

The elastic suture has the advantage of being able to accommodate itself to the various degrees of contraction of the uterus, but this would not seem to be necessary, since both

<sup>1</sup> Harris. Am. Jour. Med. Sci., 1878, vol. lxxv., p. 329.

<sup>2</sup> Säger: Kaiserschnitt, p. 91.

<sup>3</sup> Säger, Archiv f. Gyn., l. c., p. 392.

<sup>4</sup> L. c., p. 81.

<sup>5</sup> Säger: Kaiserschnitt, p. 114.

silver and silk, without possessing this quality, have given good results. If the elastic sutures are properly disinfected, I do not think there is any danger of setting up inflammation. Even if they finally should cut through, this process will be a slow one, and the opening left by the contracting suture will gradually be filled with new-formed tissue. The comparatively thick threads are not a proper material for a separate peritoneal suture, which is of so great importance.

Sometimes the abdominal wound has opened and allowed the withdrawal of the sutures. Thus, in Sanger's case, five sutures were removed thirteen days after the operation. A few days later, three more were removed, and the last came away spontaneously several months later.<sup>1</sup>

The observation that in some of the successful cases the uterus thus grew together with the anterior wall of the abdomen, and that the sutures were removed, has led to the introduction of the *utero-abdominal suture*. Its inventor is Pillore (1852).<sup>2</sup> He stitched each lip of the uterus with wires to the corresponding lip of the abdominal wall in its lower third, and united the upper two-thirds of the lip with the opposite lip. By so doing, he shut off the uterine cavity from the abdominal cavity, led all secretions out of the body, and prevented incarceration of intestines. This was certainly an improvement on the practice reigning at that time of closing up the abdominal wound over a uterine wound left without suture, but it is not to be compared with the application of a suitable uterine suture. It produces an adhesion to the abdominal wall which is not necessary to recovery, and which is likely to give rise to abortion or, at least, to discomfort in a following pregnancy. It exposes the patient to all the dangers of a protracted suppuration, and it closes the wound in the uterus by a plug of cicatricial tissue, which impairs its strength, and may cause rupture of the uterus in a following labor.

E. Martin proposed to carry silver sutures from the inside of the uterus out through the abdominal wall and then tie them so as to close both wounds—a procedure which proved successful in a case operated on by Olshausen, with the only difference that he used silk sutures.<sup>3</sup>

<sup>1</sup> Kaiserschnitt, i., p. 37.

<sup>2</sup> Sanger: Kaiserschnitt, p. 115, seq.

<sup>3</sup> Sanger : Kaiserschnitt, p. 115.

Braxton Hicks,<sup>1</sup> in order to arrest hemorrhage from a sinus, introduced a wire through the uterine wall, brought it out half an inch lower down, and brought both wires through the abdominal wall. Next, he did the same on the other side, and finally twisted the two wires together with those of the opposite side. An inch lower down he carried a wire simply through the abdominal and uterine walls from side to side, and twisted it. Elsewhere the abdominal parietes were only unfixed. The patient had violent vomiting, and died on the fourth day. At the autopsy, no extravasation was found. The cause of death is not stated, but seems to have been peritonitis, the symptoms being burning pain, vomiting, tympanites, and quick pulse.

Robert Barnes<sup>2</sup> has proposed another modification of the utero-abdominal suture. The suture, says he, should meet the following conditions: (1) stop the hemorrhage from the cut surface of the womb; (2) secure the apposition of the lips; (3) keep the anterior wall of the uterus in apposition with the abdominal wall so as to favor adhesion without causing dragging; (4) admit of easy removal. The third point, as just stated, I do not take to be an advantage. It is against nature, and not necessary. Nor is the removal of the sutures, as appears from the foregoing pages, necessary. The suture itself is very complicated. A wire is passed through the uterine wall in two places of the same side, as in Hicks' case, in order to compress a bleeding sinus. Another wire is passed through corresponding points of the other side of the womb, but so as to pass it through the first loop. Then a third wire is passed over the crossing of the two loops and carried out through the vagina. Finally, the four wires passing through the uterine wall are crossed, and brought through the abdominal wall and tied. The removal of the utero-abdominal sutures, which may be undertaken on the seventh or eighth day, is done in the following way: "Get an assistant to draw gently on the line brought from the vagina, whilst a finger of the left hand follows it up to its connection with the intrauterine loop, which can then be divided by scissors worked with the right hand. The sutures are then withdrawn by gentle traction upon the ends which rest upon the abdominal surface.

<sup>1</sup> London Obstetrical Transactions, 1870, vol. xi., p. 100

<sup>2</sup> London Obstetr. Trans., 1871, vol. xii., p. 364.



This method has not been tried in practice. The crossing of the wires before passing the abdominal wall will be liable to pucker the uterus, and may even make the wound gape. If several of these double sutures are to be passed, which would seem necessary, the procedure will take much time. It seems doubtful if there will always be room enough to introduce a finger and a pair of scissors through the cervical canal after eight days.

All kinds of utero-abdominal sutures are open to the objection that, when vomiting sets in, as it did in B. Hicks' case and in mine, the wound is exposed to much more dragging when fixed to the abdominal wall than when the uterus is freely movable.

Even after the introduction of sutures, *hemorrhage* may occur from the wound or from the interior of the womb, as in other confinements, and is then to be treated in the usual way by evacuation of clots from the interior, hypodermic injection of ergot, compression, kneading, or faradization of the womb, intrauterine injection of hot water, vinegar, diluted alcohol, tincture of iodine or diluted liquor ferri perchloridi or liquor ferri subsulphatis.

During these procedures the womb ought to be protected against refrigeration and infection by the application of cloths wrung out in chlorine water mixed with hot water. All hemorrhage ought to be arrested before the abdomen is closed. Dr. Lungren<sup>1</sup> in his last case lost nearly an hour in the endeavor to entirely control the oozing of blood, and Ritgen<sup>2</sup> in a successful case, left the uterus even for an hour and a half outside of the abdomen, until he had mastered the bleeding.

*Abdominal Drainage.*—Formerly the abdominal wound was always left open at the lower end and a tent introduced. The first who closed the whole wound was Reiche<sup>3</sup> (1854). The question if we shall use drainage can be answered here as in regard to ovariectomy. Experience shows that the patient may recover without any peritonitis, or escape of blood or lochia into the peritoneal cavity, and the chances for a speedy recovery are much better when the abdomen is closed. Conse-

<sup>1</sup> L. c., p. 82.

<sup>2</sup> Säger: Kaiserschnitt, p. 167.

<sup>3</sup> Säger: Kaiserschnitt, p. 104.

quently the rule ought to be to do so. On the other hand, when the presence of bad fluids is to be anticipated, it is better to introduce drainage tubes. A very excellent way of doing this is by Hegar's so-called *capillary drainage*, which is based on the principle of suction by capillarity.<sup>1</sup>

A glass tube, from 16 to 18 centimetres long and 10 to 12 millimetres wide, with side openings near the closed end, is introduced behind the uterus. It is fixed between the sutures of the abdominal wound, and carried out through a slit in the antiseptic dressing. The free opening is surrounded by and stopped with carbolized cotton, and the whole covered with protective. A wire wound with absorbent carbolized cotton is left in the tube in order to suck out all fluid. From time to time, in the beginning every hour, later at longer intervals, stopper and wire are removed, the glass tube wiped dry with other wires wound with cotton and another left in the tube, all of which can be done by the nurse without disturbing the patient or interfering with the dressing.

Lungren<sup>2</sup> placed a fenestrated rubber tube, about six inches in length, along the line of the incision of the uterus and secured it in the lower angle of the wound by passing an iron wire through it and the abdominal parietes.

If no drainage has been used and the condition of the patient (high temperature or collapse) points toward gaping of the wound or oozing into the peritoneal cavity, it seems advisable to open the abdominal wound on the level of the fundus, introduce a drainage tube behind the womb and another from the lower end of the wound up to either side of the vesico-uterine excavation, but this procedure may disturb useful adhesions already formed, and the fluid may have gravitated into parts which are not reached by the tubes, or brought all over the peritoneum by peristaltic movement. This secondary drainage does, therefore, not hold out as good a promise as the primary.

*Utero-vaginal Drainage.*—While there are serious objections to the drainage from the uterine cavity through the uterine wound and an opening left in the abdominal wound, and while I think even drainage tubes placed outside the uterus and carried out through the abdominal wall are only to be recom-

<sup>1</sup> Hegar u. Kaltenbach, l. c., p. 264.

<sup>2</sup> L. c., p. 82.

mended in exceptional cases, there is no objection to passing a drainage tube from the uterine cavity through the vagina, and it may answer a good purpose in assuring the free flow of the lochial discharge. In my case I used one with nine millimetres calibre, and at the autopsy the uterine cavity was found empty. It had side holes, because I only intended it for drainage. If intrauterine injections are contemplated, another smaller tube without side openings ought to be placed next to the first. The two tubes might even conveniently be sewn together. When the uterus contracts, it will push the tubes down, and they ought then to be shortened so as to open on a level with the vulva and be easily covered by the dressing. Säger<sup>1</sup> knows only of two cases in which utero-vaginal drainage was used, viz., one of Schröder and one of Reuss.

Frank<sup>2</sup> suggests to draw the omentum down behind the uterus, in order to keep the intestines away from the pouch between the uterus and the abdominal wall. This would certainly be advisable, for the movable intestines work like a pump, and bring whatever might ooze out of the uterus all over the abdominal cavity, and they prevent union between the uterus and the anterior abdominal wall, which after all is no bad way to recovery. It would be advisable, I say, if we were sure that no inflammation occurred; but if the omentum thus drawn down behind the uterus became adherent to it or the posterior wall of the abdominal cavity, the peristaltic movement might thereby become seriously impeded.

*Frank's Method.*—Frank, an assistant of Bardenheuer, of Cologne, who has obtained uncommonly good results by leaving the peritoneal cavity open after the extirpation of the uterus,<sup>3</sup> has operated on a dying woman in a way which starts from principles pretty much opposed to those of all other modern operators.<sup>4</sup> Following his chief, he is an enthusiastic drainer. He turned out the uterus, made an incision almost from the bottom of the vesico-uterine pouch up to the middle of the body of the womb, extracted the child, mopped the inside of the womb with five-per-cent carbolized water, ligated four bleeding

<sup>1</sup> Kaiserschnitt, p. 170.

<sup>2</sup> Frank, l. c., p. 603.

<sup>3</sup> See Zur Frage der Drainirung der Peritonäalhöhle; Stuttgart, 1880—und Die Drainirung der Peritonäalhöhle; Stuttgart, 1882.

<sup>4</sup> Frank, in Centralbl. für Gynäkol., 1881, No. 25, p. 598.



vessels, placed a drainage tube as thick as a thumb, so as to reach from the orifice of the vagina through the womb and the lower end of the abdominal wound to the symphysis pubis, and another drainage tube through an opening made for the purpose at the very bottom of the vesico-uterine excavation, beginning and ending at the same points as the first. Above the drainage tubes, he closed the uterus with four deep catgut sutures. Next, he sewed the two round ligaments together with carbolized silk, above the wound, uniting them as far down as it was possible without causing too much tension. The lower parts of the ligaments were sewed to the parietal peritoneum. Thus, a kind of tent was built over the uterus, which formed a barrier between it and the peritoneal cavity. A third drainage tube was placed in front of the uterine wound, reaching almost up to the top of the tent, and ending with the other two at the lower end of the abdominal wound. If the uterine wound should tear so as to extend beyond the point where the round ligaments can be brought together, or if the lower part of these ligaments cannot be sewed to the parietal peritoneum far enough to close the tent, he advises to do it by means of resorbable animal membranes made of intestines in a similar way as catgut. The last abdominal suture comprises the two round ligaments near the lowest point of their union.

He applies a very careful antiseptic bandage. First he places a pledget dipped in five-per-cent carbolized water on the anus. Then he keeps the bladder empty by a particular kind of catheter connected with a vessel filled with carbolized water. Finally, he covers abdomen, vulva, and anus with a complete Lister dressing.

This method seems to be rather complicated, and since so far it has only been performed once on a woman doomed to die from extensive burns, which she did ten hours after the operation, it has not yet stood the test of experience.

*Cohnstein's Method*<sup>1</sup> I shall only briefly mention as a curiosity. He proposes to turn the uterus out, make a longitudinal incision on the posterior wall, use no suture, and drain through Douglas' pouch.

I doubt that it would be easy to turn the uterus so far out as to be able to withdraw the child and the secundines from

<sup>1</sup> Centralbl. f. Gynäkol., 1881, vol. v., p. 290.

behind, and it must be remembered that the uterus, even after being emptied, reaches up to the neighborhood of the umbilicus, and that, consequently, its upper part is at a considerable distance from the opening made in Douglas' pouch. If, therefore, the wound should gape, which in its unsutured condition it is very liable to do, the fluid from the interior of the uterus is apt to flow all over the posterior part of the peritoneum.

#### THE KYPHOTIC PELVIS.

The pelvis in the case reported in the first part of this paper belongs to the class called kyphotic or arthrocaëic.<sup>1</sup> The latter name would be preferable, not only because it marks the etiology of the deformity as dependent on caries, but because in most cases the kyphosis which causes the deformity of the pelvis is not situated in the pelvis itself, but more or less above it. The former appellation is, however, the commonly accepted one. Kyphosis is, as everybody knows, by no means a rare deformity, and yet this variety of narrow pelvis is rare, because it is only when the disease is situated low down on the vertebral column that the pelvis becomes distorted. Most hunch-backed women have easy confinements. Cases like ours which call for energetic interference by the obstetrician are exceptions, and only a few such pelves have been described.<sup>2</sup> A short description of ours may therefore be of some interest, especially as it came from a woman born in this country, where the higher degrees of contracted pelves are of compara-

<sup>1</sup>Fehling: Pelvis obiecta in Folge von arthrokakischer Lumbosacral-kyphose, in *Archiv für Gynäkologie*, 1872, vol. iv., p. 2.

<sup>2</sup>Breisky: Ueber den Einfluss der Kyphose auf die Beckengestalt, in *Wiener medicinische Jahrbücher*, 1855, vol. xxi., p. 21. Moor: Das in Zürich befindliche kyphotisch verengte Becken; Zürich, 1865. Hugenberger: Ein kyphotisch querverengtes Becken, in *Petersburger medic. Zeitschr.*, 1868, vol. xv. Chantreuil: *Etudes sur les déformités du bassin chez les cyphotiques*; Paris, 1869. Höning: Beitrag zur Lehre vom kyphotisch verengten Becken; Bonn, 1870. (The four last works not being accessible to me, I quote from Spiegelberg, *Lehrbuch der Geburtshülfe*; Lahr, 1878, p. 501.) Fehling, l. c. Stadfeldt: Det mekaniske Misforhold under Födselen; Copenhagen, 1872, p. 80. Leopold: Das skoliotisch- und kyphoskoliotisch-rhachitische Becken; Leipzig, 1879. Hüter: Lumbosacral-kyphotisches Becken; *Zeitschr. f. Geburtsh. u. Gynäk.*, vol. v., number 1. *Centralbl. f. Gyn.*, 1880, vol. iv., p. 254. N. Phenomenon, of St. Petersburg: Zur Lehre von dem kyphotischen Becken und der Ruptur der Beckensymphysen während der Geburt; in *Zeitschr. f. Geburtsh. u. Gynäk.*, 1882, vii., pp. 254-304.

tively rare occurrence. My German readers will probably find

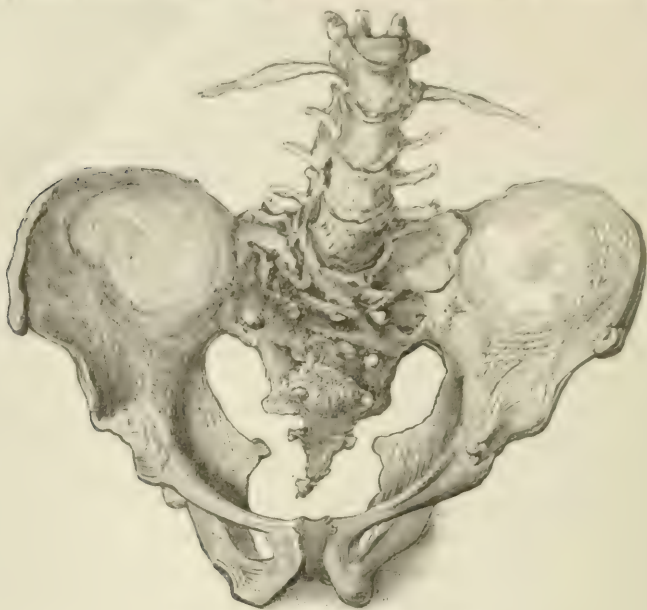


FIG. 3.—Seen from above and in front.



FIG. 4.—Seen from below and behind.



fault with the brevity of the description, but so many details as are found in their descriptions of similar specimens would scarcely find a reader in this country, and would not be given the necessary space in this journal.

The pelvis (see figs. 3 and 4) has been removed with the lumbar column and the two lowest dorsal vertebræ. This part of the vertebral column shows a slight scoliosis with the convexity turned to the left side, and a slight torsion in the same direction. The bodies of the single vertebræ are a little higher on the convex than on the concave side of the curvature. In all other respects, the first lumbar vertebra is normal. The second is so, too, in regard to shape and size, but shows three patches of superficial caries on the left side of the body and the left root of the arch. The third lumbar vertebra has suffered considerably. On the right side of the body, where it is best preserved, and where the lower edge is still distinctly visible, it has only half its normal height. In front and toward the left side, it has become blended with the fourth. This and the fifth are only represented by an irregular bony mass, one centimetre high. The intervertebral cartilages between the three last vertebræ have disappeared. The transverse processes of these three vertebræ are all present, but are much approached to one another on the right side, and come in contact with one another on the left. New articular surfaces have been formed where they are in apposition. The fourth and fifth pair have become very thin. The intervertebral foramen between the second and third lumbar vertebra is normal; that between the third and fourth is compressed from above downward so as to be only half as large as it ought to be; those between the fourth and fifth lumbar vertebra and the sacrum have on the right side become so narrow that they are only three millimetres high. On the left side they have disappeared. The arches of the first and the second lumbar vertebra are tolerably normal. The third is somewhat crooked and smaller than normal, and the joint between the articular processes of the third and fourth on the left side shows signs of osteitis. The fourth arch has only half its normal height; the spinous process is small, and slants downwards. The middle part of the fifth arch, with the spinous process, has disappeared altogether, but the articular processes and their joints are preserved.

The intervertebral cartilage between the last lumbar vertebra and the sacrum, as well as the promontory have been destroyed.

The sacrum is small and flat. It deviates to the left side, so as to form a somewhat acute angle with the lumbar column on the left side, while that on the right is more than a right angle. Its anterior surface forms an open angle, the top of which is at the second sacral vertebra, or rather where it would be if it had not been destroyed. The concavity, from side to side, is much exaggerated, the lateral parts having been drawn considerably forward. The four anterior sacral foramina on either side are pre-

served, but they have come much nearer to one another than normal, especially the two upper ones.

That part of the second sacral vertebra which should be situated between the foramina has entirely disappeared, and of the first very little is left. In their place is found a hole extending into the sacral canal, and connecting the second foramen with that of the other side. This hole was filled up with a calcareous mass extending down in front of the third, the fourth, and the fifth sacral vertebra, where it formed the knotty masses felt in the patient's lifetime. During the preparation of the specimen, a great deal of this loose mass was broken away. The right wing of the first and second sacral vertebra has been partly destroyed, so as to leave the articulation open. The base has been pushed so much backwards that its posterior end on the left side reaches the crest of the ilium, and on the right overlaps it a little. In consequence of this tilting, the anterior part of the articular surface of the ilium has become exposed even on the left side, where the base of the sacrum is preserved. The synchondrosis on this side has been changed into a synostosis. The posterior surface is flat and almost smooth. The first false spinous process is the only one which is well developed. Where the second should be is found a hole 2.5 centimetres in length by 1.5 centimetres in width, leading into the interior, and connecting with that described on the anterior surface. The third spurious spinous process is little developed. The hiatus of the sacral canal is uncommonly long and narrow. The posterior sacro-coccygeal ligaments have been ossified as well as the cartilage between the sacrum and the coccyx. The three upper coccygeal vertebræ are likewise united by synostosis. The fourth, and last, is broader than the two preceding ones, and is bound to the third by an intervertebral cartilage. The whole coccyx is curved toward the right side. Thus the median line drawn through the lumbar, sacral, and coccygeal vertebræ forms a slightly curved line.

The innominate bones have been rotated on an axis running in an antero-posterior direction through the hip-joint, so that the upper part has been moved outward, the lower inward, and besides the bone has been stretched in such a way that the angle formed between the upper and lower part of the ilium at the linea ilio-pectinea has become larger than normal. The bone has likewise been stretched in the direction of a line drawn from the symphysis pubis to the posterior part of the crest of the ilium. The iliac fossa is not only much shallower than normal in its anterior part, but in the posterior part it is replaced by a convexity. This part is thin as paper on a much larger area than on the normal pelvis. Although the bone lies much flatter than normal, the distance between the anterior superior spinous processes on both sides is less than normal, which shows that the pelvis, besides other abnormalities, is too small. Commonly, this distance in kyphotic pelvis is larger than normal. The posterior superior spines of the ossa ilium protrude much less than normal. The distance between the two spines of the ischia is reduced to

less than one-half of the normal, and that between the tuberosities to slightly more than one-half. The descending ramus of the ischium is uncommonly thin. The body of the ischium is more concave in the antero-posterior direction than normal, and consequently the spines of the ischia are turned more inward. The pubic arch is very narrow. The ascending ramus of the ischium and the descending ramus of the pubis are curved outward, so as to meet one another at the top of an arch instead of forming a straight line. The symphysis is pushed up to a higher level, and at the same time forward. The horizontal part of one pubic bone forms with that of the other a much stronger curve than normal, nay almost an angle. The anterior surface of the symphysis is broader than normal, while the line of union on the posterior surface is so narrow and crooked that it would be impossible to pass a knife through it. The ilio-pectineal eminence is strongly marked.

If now we will look at the pelvis as a whole, we notice the much diminished inclination. If we hold the column perpendicularly, the brim of the pelvis becomes almost horizontal, and the outlet forms with the horizon an acute angle open forwards instead of backwards. The pelvis is funnel-shaped. The brim forms an oval with the longest diameter directed antero-posteriorly. This diameter is two centimetres longer than normal, while the transverse diameter is two and a half shorter than normal. The distance from the end of the coccyx to the lower end of the symphysis pubis is normal. The ischial spines project so much inward, and the whole anterior part of the pelvis has become so narrow that the two great sciatic notches, together with the outlet of the pelvis, have the shape of the figure called clubs (in French *trèfle*—clover) on playing cards. The lower part of the edge of the sacrum and the coccyx, instead of forming a wide bay with the lower part of the ilium and ischium, forms a narrow one, the edges, apart from the projecting spine of the ischium, being almost parallel. The outlet forms a narrow ellipsis with the long axis placed in the antero-posterior direction.

All the bones composing the pelvis are slender and white. The whole specimen weighs only 515 grammes (one pound and two ounces).

There is some asymmetry. A sagittal plane running through the symphysis pubis intersects the right transverse process of the first lumbar vertebra, and a similar plane laid through the centre of this vertebra reaches the pubic bone 2.5 centimetres to the left of the middle line of the symphysis. The left innominate bone, as appears distinctly on the figures, is shorter than the right, and the left half of the pelvis is somewhat smaller than that of the other side.

The *mechanism* by which these abnormalities are brought on is pretty well understood. The primary cause is a caries of one or more vertebræ. When the vertebral body is consumed, the



weight of the superincumbent part of the whole body causes the column to bend forward, forming an angle at the diseased part. The stooping produced in this way would be highly inconvenient and fatiguing, and, instinctively, the individual obviates the evil by carrying the head and the upper part of the trunk backwards, whereby is produced a lordosis more or less compensating the kyphosis situated lower down. The scoliosis and torsion found in our case served to obviate the greater sinking toward the left side, due to the greater destruction of the columnar vertebræ found on this side.

The sacrum, forming the lower leg of the angle formed by this bone and the spine, is tilted backwards, so that its upper end recedes, and its lower end is pushed forward, whereby the conjugate of the brim of the pelvis is elongated, and that of the outlet would be shortened if other powers, which presently will be pointed out, did not counterbalance the effect. At the same time, a compression from side to side takes place, the broadest part of the base, which is situated in front, being squeezed in between the posterior part of the iliac bones, where the distance between them is smaller. The result of this is an exaggeration of the normal curvature from side to side. In our case, the sacrum itself has suffered much from caries in its upper and anterior part, and thus the anterior surface has become bent under an angle at the seat of the second vertebra, while the posterior surface shows the flat, long, narrow triangular surface characteristic of a kyphotic pelvis. This stretching of the sacrum is doubtless due to the fact that pressure from above strikes the upper end of the bone under the most favorable angle, and therefore works with more power on that than on the part situated nearer the transverse axis around which the bone is being tilted, the strong ligaments between the sacrum and the ilium opposing a powerful resistance to the simple tilting backward of the bone *in toto*. The stretching of the lower half of the bone I suppose is brought about by the abnormal tension of the extensor-dorsi muscle above and the gluteus-maximus muscle below.

We have seen that the stooping of the upper part of the body was obviated by a compensating lordosis formed above the place of the kyphosis, but still another means is brought into action, in order to bring the body in a more favorable relation to the

ground when the individual is in the upright posture. The whole pelvis is tilted backward, turning on an axis uniting the two hip-joints. This movement can only be executed by the contraction of the glutei-maximi muscles. But this backward tilting finds a check in the strong ilio-femoral ligament. This ligament, being constantly put on the stretch to an abnormal degree, explains the development of the ilio-pectineal eminence and the parts of the bone situated above the acetabulum generally, on which that ligament is inserted. The frequent abnormal contraction of the gluteus maximus draws down the posterior part of the ilium, and produces the convexity we have noticed there. Another force acting on this bone is the increased tension on the strong short posterior ilio-sacral ligaments, caused by the tilting of the sacrum. By these ligaments, the posterior part of the bone is drawn backwards, and the whole stretched. The combined effect of the contracted gluteus maximus behind and the stretched ilio-femoral ligament in front is to push the head of the thigh-bone inward and upward. Hereby the os innominatum is stretched, and its component parts brought nearer to the corresponding points on the other side. Thus the conjugate diameters become lengthened, and the transverse shortened. In our case, the lengthening of the conjugate of the outlet caused by the protrusion of the symphysis pubis counterbalances the shortening caused by the tilting of the sacrum, so that it retains its normal length. The posterior part of the acetabulum is pushed more backward, and thereby the spine of the ischium is turned more inward than would be the result of simple pressure toward the median line.

The tuberosities of the ischia once brought nearer to one another by the tilting of the os innominatum will be brought still nearer by the pressure exercised against them in the sitting posture.

To the same influence, as well as to strong inward pressure of the head of the femur, I ascribe the curvature noticed at the junction of the ascending ramus of the ischium and the descending ramus of the pubes.

It appears from the foregoing explanation that the lower down on the vertebral column the defect is situated, and the earlier in life it occurs, the greater will be the deformity of the

pelvis resulting from it. In our case, the seat of the disease was in the lower lumbar vertebræ and the sacrum, and it began when the patient was only four years old.

The smaller size of the left innominate bone and the recession of the symphysis to the right, observed in our case, find their explanation partially in the increased pressure exercised from above by the weight of the body on the left side caused by the greater destruction of the lumbar vertebræ and the sacrum on that side, and partially in the lameness of the left leg.

For those more particularly interested in deformed pelvis I shall now give the exact measures in centimetres of the most important distances observed on the pelvis in question, adding, for comparison's sake, those of a normal pelvis, as given by Spiegelberg.<sup>1</sup>

## NORMAL.

*The Large Pelvis.*

Between the anterior superior spines of the iliac bones.....	22.5	23.
Greatest distance between the crests of the iliac bones.....	26.	25.
Depth of large pelvis (perpendicular line from the centre of the preceding line to the plane of the pelvic brim).....	6.2	7.5
Between the posterior superior spines of the iliac bones.....	6.	10.
Between the right spin. il. ant. sup. and the left spin. il. post. sup.....	19.	
Between the left spin. il. ant. sup. and the right spin. il. post. sup.....	18.	
Between spin. il. ant. sup. and spin. il. post. sup. on either side.....	14.5	
Length of right os innominatum, from anterior end of tuberosity of ischium to crest of ilium.	20.2	
Length of left os innominatum .....	19.2	

*The Sacrum.*

Length of anterior surface.....	6.6
Width at the upper end of anterior surface.....	10.12
Greatest width of base.....	11.2
Width of posterior edge of base.....	10.
Length of posterior surface.....	9.7

*At the Brim of the Pelvis.*

True conjugate, from middle of promontory to upper end of symphysis pubis.....	13.2	11.
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<sup>1</sup>L. c., p. 9 seq.



## NORMAL.

Transverse diameter, from middle of left innominate line on one side to the corresponding point on the other .....	11.	13.5
Right oblique diam., from right sacro-iliac joint to emin. ilio-pectinea.....	13.2	12.5
Left oblique diam, from left sacro-iliac joint to right eminentia ilio-pectinea .....	13.8	12.5
Right sacro-cotyloid distance, from middle of promontory to acetabulum.....	10.	9.
Left sacro-cotyloid distance .....	9.3	9.

*In the Normally Widest Part of the Pelvis.*

Conjugate cannot be measured on account of loss of substance of sacrum.....		12.75
Transverse diameter between highest points of the two acetabula .....	9.2	12.
Right oblique diameter, from centre of upper edge of large ischiadic notch to upper side of sulcus obturatorius of the other side.....	10.1	
Left oblique diameter .....	11.8	

*At the Normally narrowest Part of the Pelvis.*

Conjugate from the apex of the sacrum to the lower end of the symphysis pubis .....	10.8	11.5
Transverse diameter, between the spines of the ischia. ....	4.5	10.

*At the Outlet.*

Conjugate from lower end of coccyx to lower end of symphysis pubis .....	9.4	9.5
Transverse diameter, from the middle of the tuberosity of the ischium to the corresponding point on the other side.....	5.5	11.
External conjugate between upper end of first spinous process of sacrum and upper end of symphysis pubis.....	19.	19-20 <sup>1</sup>

*Other Measures.*

Obstetric conjugate, from middle of promontory to nearest point of symphysis pubis.....	12.8	10-10.25
Diagonal conjugate, from middle of promontory to lower end of symphysis pubis.....	13.5	12.5
Height of right side wall of true pelvis, from linea innominata at eminentia ilio-pect. down to tuberositas ischii.....	8.5	
Height of left side wall of true pelvis.....	8.	

In spite of the great lightness of the bones, this pelvis is not a rachitic one. The cause of the deformity is not rickets, but caries, and the shape of the pelvis differs from the kypho-

<sup>1</sup> Measured from spinous process of fifth lumbar.

scoliotic rachitic one. In the latter, although the true conjugate is relatively or absolutely increased, and the brim of the pelvis is more or less round, and sometimes flattened on one side, still the conjugate is always shorter than the transverse diameter.<sup>1</sup>

The scoliosis was little marked, and has had, comparatively, little influence on the shape of the pelvis. This is, therefore, to be placed in the class of the simple kyphotic pelvises.

#### CONCLUSIONS.

1. Porro's operation ought not to supplant the Cesarean section except in particular cases.

2. When the Cesarean section or one of its substitutes is called for, they ought, everything otherwise equal, to be preferred to one another in the following order: gastro-elytrotomy, Cesarean section, utero-ovarian amputation, and total extirpation of the uterus.

3. Embodying what has proved or seems to be improvements on the old Cesarean section, the *modus operandi* of the modern operation may be thus described.

The best time for operating is as soon as labor-pains have become strong and frequent.

The first part of the operation is identical with that of ovariectomy. The bowels and the bladder having been emptied, and the pubes shaved off above the symphysis, the abdomen is washed with soap, ether, and a five-per-cent solution of carbolic acid, and the vagina disinfected with the same solution. The operator, his assistants, as well as the instruments, sponges, ligatures, and sutures ought to be disinfected according to the principles of antiseptic surgery. The temperature of the room ought to be about 80° F. The patient is placed on her back on a long narrow table covered with a mattress, quilts, or blankets, over which is spread a sheet. She ought to be warmly dressed. She is anesthetized, which may be begun while she is yet in bed. If possible, one or two steam-spray producers, filled with a solution of chloride of zinc, salicylic acid, or diluted chlorine water are directed over the field of operation.

The operator stands to the right of the patient. Besides

<sup>1</sup> Leopold, l. c., p. 30.

the one who attends to the anesthesia, four assistants are desirable. The chief assistant is placed in front of the operator. One to the left has special care of the uterus. One to the right hands the instruments. One to the left of the chief assistant has particularly to attend to sponging. By percussion, the operator ascertains that no intestines are present between the uterus and the abdominal wall, or pushes them aside. The chief assistant presses the abdominal wall against the uterus. An incision is made in the median line through the skin and the linea alba from the umbilicus to three or four centimetres (an inch or an inch and a half) from the symphysis pubis. Bleeding is, if necessary, controlled by means of compression forceps. Next, the peritoneum is lifted up with a tenaculum, and a small opening made in it, through which a director is passed, and the membrane incised to the same length as the other tissues. The incision is extended as much upward to the left of the umbilicus as may be deemed necessary for the easy extraction of the child. If possible, a strong elastic tube or solid rubber cord is passed by means of a uterine sound round the cervix, tied in a half-knot, which is grasped with a compression forceps. Behind the compressed place, thick silk ligatures are passed round both ends, and tied. If it is not possible to pass the tube while the uterus is *in situ*, the incision is extended far enough up to allow of its being turned out, as in Müller's operation, and then the tube is passed and, if possible, tied. The uterus may be helped out by pressure from the vagina, besides lifting its fundus through the abdominal wound. If the child is too low down, the tube is merely put loosely round the cervix, and tightened after the removal of the child. The chief assistant prevents the protrusion of intestines by holding the lips of the wound together, pressing them against the uterus, or by applying a large flat sponge or a cloth dipped in a warm disinfectant.

An incision is then made in the median line of the uterus so as to avoid the fundus and the cervix, but long enough to allow the child to be withdrawn with ease, say twelve to fourteen centimetres (four and a half to five and a half inches). This incision is best begun with a convex pointed bistoury, and continued with a probe-pointed. If the placenta is in the line of incision, it is cut together with the uterine wall (Spiegelberg).



If the operation is performed with the uterus *in situ*, the chief assistant hooks both his index fingers into the angles of the uterine wound, holding it pressed against the corresponding points of the abdominal incision. If it is performed outside of the body, the assistant to the left of the operator covers the uterus with a warm cloth and steadies it, and the abdomen behind the uterus is covered with disinfected gutta-percha tissue.

If the waters have not broken, the operator tears the bag in such a way as to prevent the escape of the waters, especially if they are decomposed, into the peritoneal cavity. The best way of doing this is by turning the patient on her side, as is done for ovariectomy in this city. The operator tears the bag in a place where he can seize the head, the breech, or the feet of the child. It is an advantage to get the head out first, because the contraction of the uterus round the neck after the delivery of the body may be so great as to render its removal difficult, and necessitate an extension of the incision.

As soon as the child is delivered, the cord is tied and cut, and the child given to a nurse or, preferably, a sixth assistant, who, if it be asphyxiated, uses proper remedies for its revival.

If there is no hemorrhage beyond the evacuation of the blood pressed out of the uterine tissue by retraction and contraction, and if the placenta is not expelled spontaneously, it is good to wait about five minutes before detaching the secundines. This is done deliberately and with great care, so as not to leave any part behind, which is best accomplished by removing the after-birth in one piece.

Thereafter, clots are turned out from the womb, and its interior mopped all over with sponges, and a drachm of the fluid extract of ergot is injected hypodermically.

If there is hemorrhage, the tube surrounding the cervix is tightened, the secundines are removed, the uterus is made to contract by kneading, hot cloths, or faradization. If the hemorrhage persists, and is seen to come from the internal surface, the bleeding parts are swabbed with vinegar, diluted alcohol, tincture of iodine, or *liqu. ferri perchloridi*.

If the hemorrhage is prevented by the constriction of the cervix and broad ligaments, but the uterus does not contract, the same procedures are used.

If the cut surfaces have such a shape as to be easily

adapted to one another, sutures may now be passed without further preparation. If, on the contrary, they bulge out so as to oppose a resistance to a thorough adaptation, the peritoneum ought to be dissected off to a distance of one centimetre (three-eighths of an inch), a slice of the muscular tissue with the adherent portion of the decidua cut off from either side, and the peritoneal flaps turned down over the cut surface.

Beginning at the upper end, a row of interrupted sutures of strong carbolized silk are passed one centimetre from the edge through the peritoneum and muscular substance, but not including the decidua. The distance between two and two sutures ought to be from one to one and a half centimetres. The ends belonging to a suture are tied together, as soon as it is passed, in order to find those which belong together when they are to be tied. When all these deep sutures have been passed, the provisional knot is cut off from one, and that tied firmly, the chief assistant approaching the edges with two tenacula, and taking particular care to bring as much as possible of the serous surface of the peritoneum of both edges into contact.

The same is repeated for every suture from one end of the incision to the other. Then superficial sutures of finer silk are passed midway between two and two of the deep ones, at a distance of five millimetres (one-fifth of an inch) from the edge. They go only through the peritoneum and the nearest muscular tissue, and in tying them particular care is taken to bring as large surfaces of peritoneum in contact as feasible. All sutures are cut short.

After muscular excision, the sutures are passed in a similar way, except that the superficial ones go so deep as to go through the turned-down peritoneal flaps, near their free edge.

If any sinuses are bleeding, the deep sutures should be passed in such a way as to compress them. If this cannot be obtained by the simple interrupted suture, the so-called mattress-suture may be substituted. This suture is passed by bringing in the needle in the usual place, carrying it under the sinus and out below it. A similar one is passed through the other lip, and in tying the sutures, the two upper ends are united, and so are the two lower ones.

When all the sutures have been tied, the constrictor is

cautiously removed from the cervix. If any hemorrhage should occur, the above-named hemostatics are to be repeated, to which now may be added intrauterine injection of so hot water that the hand can just be held in it (110 to 115° F.)

When the hemorrhage is arrested, a finger-thick soft rubber tube with side-holes, to which is sewed a thinner tube without such opening, is introduced into the uterus by sliding it over a uterine sound or metallic intrauterine catheter.

The abdominal cavity is cleansed, and the abdominal wound closed with deep silver and superficial silk sutures passed at about twice as large intervals as on the uterus. The deep ones comprise a narrow strip of the peritoneum, the superficial ones go only through the skin.

If, on account of entrance of decomposed amniotic fluid into the peritoneal cavity, or protracted labor, or other attempts at delivery, before Cesarean section was resorted to, peritoneal complications are to be anticipated, it is better to insert between two sutures a finger-thick glass-tube with side-openings reaching down into the recto-vaginal pouch. In this is inserted a wire wound with carbolized absorbent cotton.

*Dressing.*—The patient having been carefully cleansed, a full Lister dressing is applied to the abdomen, cutting a hole for the drainage tube, if one has been introduced. The latter is covered with carbolized cotton, and protective tied around it. The genitals and anus are covered with crumpled gauze dipped in a one-to-forty solution of carbolic acid, and covered with a thick layer of antiseptic cotton (carbolized, salicylized, or impregnated with boracic acid), which extends up to the abdominal dressing, and is fastened to it with a binder.

*After-Treatment.*—The first indication is to stimulate the patient with external heat and alcoholic drinks. Iced champagne is the best of these, but sometimes small doses of coffee are better retained than anything else (Howitz). Pain is subdued by opiates, which also serve to keep the bowels quiet. After the patient has recovered from shock, she may have light liquid food. If the temperature rises, it is kept down by quinine, carbolic acid, and external dry cold administered by ice-water running through coils of rubber tubing, to be applied to the head and abdomen. Vomiting is combated by opiates, hydrocyanic acid, bismuth, strychnia, creasote, tincture of iodine, carbonic



acid, ice, counter-irritation in the cardia, etc. Peritonitis is treated with large doses of morphia, septicemia with carbolic acid, or salicylic acid, and quinine. A weak and frequent pulse due to anemia and weakness of the heart calls for hypodermic injection of digitalis, camphor dissolved in ether, or transfusion.

In favorable cases, the abdominal dressing may remain undisturbed for a week. Then the superficial sutures are removed. The deep ones are left in a few days longer, and then replaced by strips of adhesive plaster, or tape dipped in collodium. The genital part of the dressing must be changed morning and evening, or more frequently if a desire for micturition be present. This ought to be done under spray of carbolic acid solution. The water is drawn. The vagina syringed with two-and-a-half per cent carbolized water. If the lochia should be fetid, or the temperature rise, the uterus is washed out with the same solution.

If capillary drainage is used, the tube is, in the beginning, cleaned every hour, and a new wire with absorbent cotton placed in it. Later, when less liquid accumulates, the tube is cleaned at longer intervals. After five days, it may be dispensed with.

If a collection in the peritoneal cavity can be diagnosticated, the lower end of the abdominal incision is re-opened, an opening made in the vaginal cul-de-sac, and drainage established; if necessary, combined with antiseptic injections.

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AN UNUSUAL ACCIDENT IN CATHETERIZATION. RETENTION  
OF A CATHETER IN THE FEMALE URETHRA FOR  
THREE HOURS.

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BY

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At the present time it is rather a dangerous procedure to claim the reporting of a unique case of any kind, as by so doing, many a professional man has brought down upon himself an avalanche of reported and non-reported cases, and often-

times his want of knowledge of the general literature of his profession is broadly hinted at. Still, having carefully referred to the large amount of medical literature which is available in the New York libraries, and especially thoroughly examined the larger number of references in the Index Catalogue of the Surgeon-General of the U. S., many of which date back to the year 1700, and having interviewed many of the prominent surgeons and obstetricians of this city, and in no single instance finding or hearing of a similar case, I think at least the claim of the publication of an extremely rare accident in catheterization is justifiable.

On Dec. 21st, 1882, I was called by Dr. H. A. Bagley to see the following case.

The patient had been confined on the previous day about nine P.M.; labor rapid and normal, the second stage being very short.

She passed no urine nor felt much desire to do so until the evening of the above date, when the doctor in charge was sent for to relieve her. The catheter passed without difficulty, and about a pint and a half of urine was withdrawn, but on attempting to remove the instrument this was found impossible, even when considerable force was used, sufficient to produce pain and occasion the patient to remonstrate.

Dr. Bagley seeing the case to be an unusual one, and thinking that it would interest me, waited until my return, I being out when he sent for me.

About three hours later, I saw the patient and on examination found the instrument projecting one or one and a half inches from the vulvar orifice. On endeavoring to extract the catheter this was found to be impossible from some deep-seated attachment; I use the word attachment, as this exactly expresses the sensation given by traction, this being as if the catheter was held by a short elastic band, and had not the sensation of general constriction of the entire instrument or of the portion at the vesical neck, which is by no means uncommon, being seen to a more or less extent in many cases, especially in hysterical women.

A careful digital examination of urethra and bladder revealed nothing abnormal, the catheter having been passed through the urethra and the extremity being in the bladder. The catheter also was examined, as the thought occurred that the joint might have become loosened and a fold of mucous membrane caught between the two portions, but the continuity of the instrument was perfect.

Traction produced pain and a dragging sensation about the neck of the bladder. Upon suddenly letting go the instrument after traction had been applied it would snap back as if attached by a short elastic band.

Having considered the case more carefully, we excluded spas-

modic contraction of urethra and sphincter vesicæ by the peculiar sensation of attachment, not of constriction, and the further fact that it seemed impossible that so smooth an object as a silver catheter could be immovably held in the urethra when considerable force was used for a few moments, spasmodic contraction and retention being easily overcome by steady traction for a few seconds. The catching of the mucous membrane between the two portions of the instrument having been previously excluded, the only remaining source of interference that came to our minds was a prolapse of the vesical mucous membrane into the eye of the catheter; to test this, a stylet was passed into the instrument, and when it had nearly reached the end, a soft body was distinctly felt and the patient suddenly exclaimed, "You're sticking something into me and you promised not to cut me." This positively proved the nature of the accident, as by no possibility could the stylet have passed through either eye and touched the mucous membrane external to the catheter.

The calibre of that portion of the catheter in immediate relation to the joint being smaller than the portion above and below this point, the stylet must have been nearly or quite passed through the centre of the instrument and in contact with neither wall.

The diagnosis being satisfactorily made and proven, the next question was the best method of treatment. Traction failed completely, although considerable force was used, and the patient vigorously protested; then forcing of air into the catheter was tried, but this simply resulted in the air passing into the bladder through the open eye (there being two fenestræ in the instrument).

Injection of tepid saline water was suggested, but deemed insufficient to meet the requirements, as it would simply pass into the bladder as the air had previously done, and furthermore we had no proper syringe and the patient was becoming restless and frightened.

Deciding to take the risk of serious injury resulting from sudden violence, I gave the catheter a smart twist between my thumb and finger and distinctly felt the instrument suddenly become free and it was at once easily removed. The catheter contained a few drops of blood and was followed by a few more. The patient was at once relieved and comfortable, suffering no pain or inconvenience resulting from the retention of the instrument in the urethra and bladder or the method of removal.

I did not see the case again for three days, but the doctor reports that she had no further urinary difficulty or pain, being able to empty the viscus herself. However, he stated that she had a slight chill, high fever, abdominal pain and tenderness of the uterus the following day, but feels confident that these symptoms had no relation to the vesical difficulty.

The patient made a good recovery.

The catheter used was an ordinary silver, sectional, female catheter of Tiemann's manufacture, having two oval eyes near the extremity. These fenestræ were unusually small, being one-



quarter of an inch in length and slightly less than one-eighth of an inch in their transverse diameter. The edges of these eyes were very thin and sharp.

Several ideas in connection with the case come to my mind.

The possibility of a fold of mucous membrane, for such I am positive it was, passing into and, what is still more surprising, passing sufficiently far into the eye to retain the catheter against so much manipulation and traction, when the small size of the eye is considered.

The probability that it was vesical mucous membrane and not urethral, from the fact that the catheter was in the bladder, and as the eyes are near the tip, the strong probability that they were also in that viscus. That it seems more plausible for the mucous membrane of the contracted organ to form a polypoid mass in the neighborhood of the neck of the bladder of sufficient minuteness to pass through the eye of the catheter, than that a portion of the urethral mucous membrane, which at this time was on the stretch, caused the difficulty.

My explanation of this peculiar occurrence is, that the bladder, having been distended and suddenly emptied, lost some of its resilience, and that the membrane prolapsed through the eye of the catheter, following the outgoing urine, and that being so sucked in, a sufficient portion passed to be slightly constricted by the extremity of the oval opening in the catheter, this being greatly assisted by the sharp edge of the fenestra.

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#### A PESSARY FOR VAGINAL CYSTOCELE.

BY

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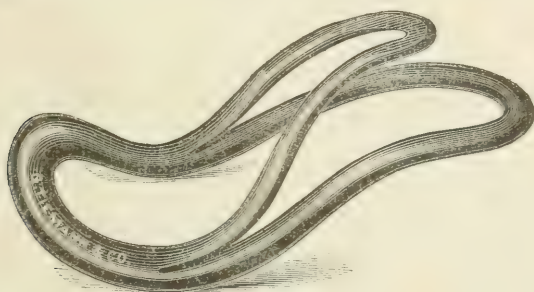
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THE insufficiency of operative procedures relied on for the relief of the condition known as vaginal cystocele is well known to all who have had much to do with the diseases of women. Such operations are planned with the intent to render tense the anterior vaginal wall, and at the same time fix the uterus in its place by narrowing the vagina if there be concurrent uterine prolapse, as is the case most frequently.

These operations in the hands of the most skilful are only partially successful in a majority of cases, and are especially unsatisfactory where the above-named complication is found, if the prolapse be considerable and of long standing.

It is well known, too, that in many cases following operative measures deemed successful, the operation requires to be supplemented with some kind of mechanical support. Many timid patients, moreover, will spurn all proffered relief that involves a cutting operation, and some cases, though not bad enough to demand such means, would be greatly benefited by wearing a well-fitting pessary.

Out of these considerations has grown a demand that has never been adequately met—a demand for an easily adjusted, easily worn, comfortable, and efficient support for the vaginal



wall in simple cases, and retentive of the uterus as well, when that organ is involved, and particularly if it be heavy.

To meet this demand, I have devised the instrument shown in the cut, made for me by Tiemann & Co., which is now being worn with much satisfaction by two of my patients, and which I am led to believe will fulfil all of the above requirements. The thickened part of the fundal extremity of the pessary which, in situ, rests, as may be supposed, in the posterior vaginal cul-de-sac, is, in the specimen from which the cut is taken, thicker than might be advisable in any case except where the intra-vaginal cervix is long and the uterus heavy.

The upper branch is made narrower and shorter than the lower one, and I have had it made inflexible in some specimens and thinner and elastic in others, without knowing yet to which I should give preference. The anterior extremity of

this branch, resting behind the pubes, is bent slightly backwards, and its upper anterior surface is slightly grooved at a point where pressure on the urethra might otherwise cause discomfort.

As with other pessaries, so with this; if the perineum be lost, it will be necessary to restore it by operation, else, the resistance offered by the perineal body being wanting, the instrument would be driven from the vagina by even a moderate pressure from above. Its power of resistance, however, over other instruments not having support from without is much increased by the presence of the upper branch, and if the perineum be intact or only slightly injured, I am of the belief that its use will be found satisfactory, though the weight above be considerable.

In one of the cases wherein I have had occasion to use this instrument, and in which great relief has been afforded the patient, a widow and mother of several children, and who had passed the menopause, had for years suffered from uterine and vaginal prolapse, and for the last three months been confined to her bed, and subjected to some sort of treatment for the same. In this case, the cystocele quite filled the introitus vaginae, causing much vesical trouble, and making it difficult to empty the bladder entirely till she had first pushed back the protruding parts. The uterus proved to be of normal size, and only moderately prolapsed. The perineum had been slightly torn years before, but was not seriously injured. In a few days she was able to walk with comfort, and soon after kept her feet the greater part of the time, voiding her urine without difficulty. At this date, five weeks after the adjustment, the instrument gives little inconvenience, and is worn with entire satisfaction. The other case, less distressing than the one cited, has derived a like advantage from the instrument, and quite as great in proportion to the severity of her symptoms.

I have only to add my belief that, while vaginal cystocele is undoubtedly due in some instances to uterine prolapse, it much oftener happens that the cause will be found in a relaxed state of the vaginal wall, of which both the uterine and vaginal prolapse are but legitimate results. This lax state of the vagina is ordinarily ascribed to frequent distention and over-distention



from child-bearing; but erroneously, I believe; else the condition would be more common, seeing that dilatation in every case of labor is probably limited only by the boundaries of the pelvic wall. It might with more reason, I think, in most cases be reckoned as the result of long-continued distention and pressure, as in protracted labor, and from lacerations of the vaginal orifice or of the perineum—such accidents being followed by *vaginal subinvolution*, if I may presume to coin a term for the occasion.

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A CASE OF INVERSION OF THE UTERUS WITH ADHERENT PLACENTA.

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BY

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CASES of retained placenta are sufficiently common to require but little notice in medical periodicals, their diagnosis and treatment being thoroughly discussed in all works upon obstetrics. But when the same are complicated by, or, rather, the cause of inversion of the uterus, they become sufficiently interesting and instructive, and act as a warning against meddling with a placenta which, if left alone, will usually take care of itself, and be the means of its own expulsion. The practice of endeavoring to remove the same by traction upon the umbilical cord cannot be too severely condemned, and that this is but a too frequent occurrence cannot be denied. I herewith append a case of partially adherent placenta, in endeavoring to remove which a complete inversion of the body of the uterus was produced.

On the night of December 15th, I was called upon to attend a woman, who gave the following history: Juana de L., aged twenty-three, married, and in her third pregnancy. Labor pains began at 1 P.M. the bag of waters broke at 8 P.M., and at 11 she was delivered of a healthy female infant weighing about eight pounds. The attending midwife, a Mexican, after waiting about an hour for the natural expulsion of the secundines, finding the patient losing a large quantity of blood and the uterine contrac-

tions quite feeble, endeavored to effect their expulsion by expression. Failing in her attempt by that method, she proceeded to drag upon the umbilical cord, and after using considerable force, succeeded in dragging what seemed to be the placenta out through the ostium vaginae. But she was surprised to find herself unable to remove it in spite of its apparently having left the uterine cavity.

All this time the patient was losing ground, and it was finally decided to send for medical aid. Upon my arrival, I found the patient's condition to be very alarming, pulse at the wrist barely perceptible, and the woman bordering on syncope, either from shock or loss of blood. Upon making a digital examination, I found what seemed to be the placenta protruding, forming a mass as large as a cocoanut pendent between the thighs.

On passing the hand into the vagina, the fingers were arrested at about seven centimetres from the vulva, and could not be passed further. Upon proceeding to inspect the parts, I found the fundus of the uterus projecting from the vulva, and having the placenta partially adherent. Further examination showed, instead of the usual prominent abdomen, a marked depression. I immediately stripped off the placenta from its attachment, the uterus contracting but slightly during this procedure.

The loss of blood was considerable, but was promptly checked by the application of water at a temperature of about 60° Cent. (140° F.) After the removal of the placenta, an effort was made to reduce the inversion by manipulation, but after considerable time had been spent in unsuccessful efforts, the woman was placed in the knee-chest position, a napkin was applied to the fundus, and pressure made with the finger tips, but without any visible impression.

A small rubber ball was then procured (about five centimetres in diameter), filled with water, and applied, as a cushion, to the fundus. The end of a smooth stick was then forcibly applied against this cushion, and after an hour's hard work, using more or less force, reduction was finally accomplished; the improvised cushion was then removed by means of a placental forceps.

The patient was ordered quinine and ergot, and the uterine cavity was washed out with a five-per-cent solution of carbolic acid in hot water 55° to 60° C., a two-per-cent solution being used at subsequent injections which were repeated daily for three to four days.

The following day, the temperature rose to 39.5° C., but was promptly controlled by the free use of quinina sulphas and frequently repeated intrauterine injections.

After a rather prolonged confinement in bed for this race of people (ten days), she completely recovered.

## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, April 19th, 1883.*

DR. W. GILL WYLIE read a paper on

### ANTEFLEXION OF THE UTERUS; ITS ETIOLOGY AND ASSOCIATED PATHOLOGICAL CONDITIONS.

The author of the paper first directed attention to the anatomy of the position and surroundings of the healthy uterus. This referred to the shape and size of the organ, its depth, flexibility, etc. The average depth was given as a little over two and one-half inches. When pressure is made on the fundus or upper portion, the organ bends, chiefly at the os internum. It does not bend so as to form an acute angle, but with a curve such as would be made by a rubber tube with very thick walls and small calibre. In very rare cases the anterior wall might be bent at a much more acute angle. A description of the supports of the uterus was then given. It is held in position chiefly by the fasciæ and connective tissue of the pelvis, and by the reflections of the peritoneum. These form more or less distinct ligaments, in which there is more or less muscular tissue, and are so elastic as to permit considerable mobility of the uterus as a whole, especially upward and downward, and backward and forward.

The elastic contractility of the muscles and connective tissue, that is, the heart and the muscles of the arteries, muscles of the ligaments and perineum and abdomen, the connective tissue of the skin and the abdomen, and perineal walls, of the ligaments, fasciæ, and so-called cellular tissue of the pelvis, unitedly exert a pressure to which he gave the name *vital musculo-connective-tissue pressure*.

Dr. Wylie then proceeded to the consideration of the dynamics of the pelvic cavity, or the influence of force in causing antelexion. The influence of atmospheric pressure has but little to do with keeping the pelvic organs in place by opposing gravity. In order that this force may act as a retentive power by counteracting gravity, the vessel must be rigid and fixed above as well as on the sides, and impermeable to air. Gravity acts upon the contents of the pelvis as it does upon the semi-solid, elastic, and mobile contents of a rigid cylinder with a flexible bottom, and with a top opening into another flexible cylinder, also filled with an elastic ever-changing mass, falling and lifting at all times, and with more or less force.

The writer then spoke of the influences which prevent a normal uterus from bending forward at or above its middle when the person stands erect, or when it is pressed upon by the action of the diaphragm and abdominal muscles, etc. First, the firm, elastic



nature of the tissues of the organ had a tendency to keep it in its normal shape; second, the forward inclination and slight anterior curvature of the normal uterus placed the organ in the best possible position to enable it to withstand both continued and sudden waves of force from the action of the diaphragm and abdominal muscles. The third influence mentioned was the vital musculo-connective-tissue pressure—that is, the sustaining power of the surrounding flexible and elastic adjustable tissues, which during life are filled with blood, fluids, gases, etc. So important is this influence that it cannot be left out when considering the dynamics of the pelvic cavity, and while the uterus is surrounded by these elastic and adjustable tissues in the living body, it is sustained in the same way as a flexible sea-weed is when surrounded by water. In other words, the tendency of the fundus to fall forward and bend the uterus on itself is very much less than it would be out of the pelvis.

The advocates of the mechanical pathology of uterine displacements had overlooked this greatly modifying influence of all indirect force acting on the pelvic organs, and had, therefore, exaggerated the effects of sudden falls in producing ante flexion, consequently they were naturally led to rely too much upon mechanical support for effecting a cure. The effect of downward pressure on the healthy uterus tends to produce general prolapsus rather than ante flexion.

Dr. Wylie then asked the question: When a uterus is soft, what causes it to become flexed when the person is erect, or when there is downward pressure produced by the action of the diaphragm and abdominal muscles? The answers were, first, the normal position of the uterus is one of anterior curvature, and if the tissues are soft the weight of the fundus has a tendency to increase this curvature; second, downward pressure would cause the pouch of Douglas and the bladder to yield first, and this yielding would make taut the utero-sacral ligaments attached to the uterus just above the vaginal junction posteriorly until these ligaments gave way. This particular part of the uterus would be held upward and backward, while the abnormally soft cervix would be pushed downward in the direction of the vaginal axis. At the same time the utero-vesical ligament would be made taut only at its higher points of attachment to the uterus, and the upper part of the fundus would be pulled downward on the bladder. The third answer referred to Hart's views as to the floor of the pelvis being divided into two segments, the author accepting some of them with modifications. Fourth, the loss, to a greater or less extent, of the vital musculo-connective-tissue pressure. Dr. Wylie then spoke of the influence of downward pressure in producing backward and forward displacements of the uterus, the latter result being the most frequent and the most important pathologically.

The influence of the bladder on the position of the uterus, and the influence of the rectum on the uterus were then considered.

The point of greatest curvature in ante flexion was mentioned next, and the writer stated that the exact location of this point is often very difficult to determine. As a rule, it is just about the os internum. And he then gave the reasons why it occurred at this point.

The time of making examinations to decide the exact degree of flexion should be carefully considered; for, without doubt, the amount of curvature varies at different times, for instance, just before and just after menstruation. The most favorable time is during one or two weeks between the menstrual periods when the uterus is usually quiescent.

After speaking of the variability of the generative organs, reference was made to the frequency and degree of ante flexion. All multiparous women have some degree of anterior curvature of the uterus, and this may vary considerably without denoting an abnormal condition; that is, while the uterus is quiescent the angle made by the axis of the cervical canal with the axis of the canal of the body may vary from  $165^{\circ}$  to  $135^{\circ}$  without being abnormal. But when it is most of the time found less than  $135^{\circ}$  it may fairly be called abnormal.

*Etiology.*—Under this head the author considered the influences which prevent the perfect development of the organs of generation; the enervating influences of modern life; the general tendency to development of the intellectual faculties at the expense of the physical health; the tendency there is in civilized communities to keep the function of these organs under restraint, enforced restraint brought about by measures to avoid child-bearing; the influence of deformities of the pelvis; the influence of excessive physical labor, although not so potent as excessive intellectual development, etc. The condition of the general health has much influence on the development and position of the uterus. Many of the cases classed as congenital are undoubtedly merely flexions made permanent before maturity is reached. Of children born of healthy parents, few reach full development in perfect health.

In those who have an inherited or acquired rheumatic diathesis, or a tendency to catarrhal diseases, exposure to malarial poisoning or to cold may induce endometritis, and finally lead to anterior displacement.

Child-bearing is usually enumerated as a predisposing cause of ante flexion; but Dr. Wylie preferred to say that too frequent child-bearing, or abnormal labors or puerperal state, or labor in an unhealthy woman, may result in an ante flexion. Child-bearing is as truly a natural act as is eating. Besides these, a large number of causes were mentioned.

*Pathology.*—For several years past he had given up the belief that ante flexion very often directly caused dysmenorrhea by mechanically closing the canal, and thus obstructing the menstrual flow. Where there is obstructive dysmenorrhea, except in rare instances, he believed it to be due, as a rule, to stenosis of the os

uteri at some point, or to clonic spasm at the os internum, as is the case in the majority of instances of dysmenorrhea in antelexion. He believed that pain and obstruction is caused by the hyperæsthetic condition at or near the os internum, combined with more or less stenosis at this point.

Antelexions may be divided into two classes: (1) those usually termed congenital, that is, those in which the curvature exists before puberty, or is acquired before maturity is complete, and the result of interfered or imperfect development; (2) those in which the curvature takes place after full growth. The peculiarities of these two classes of cases were then discussed at some length.

The President invited DR. T. ADDIS EMMET to open the discussion, who thought the subject could be simplified by recognizing the fact that in most cases the condition under consideration is due entirely to obstruction of the circulation outside of the uterus. As a rule, it is due to inflammatory action caused by cold. When we have dysmenorrhea accompanied with that condition, it is not a mechanical affection, but it is due to faulty nutrition and obstruction of the circulation, and is an affection of the general system. He believed that it was very important to recognize this as a cause of flexure, from the simple fact that malpractice was seen to no greater degree than in the treatment of such conditions by dividing the cervix, dilating the canal, etc., etc., treating the effect as if it were the cause. Inflammation in the pelvis somewhere, in one of the ligaments, is the chief cause of antelexion, and this explains why we have so uniformly trouble from surgical procedure for its relief. If attempts are made to raise the uterus before the pelvic inflammation is removed, a fresh attack will be set up. This doctrine is applicable to the treatment of all versions, and it is due to this fact that there is such a difference of opinion in regard to the use of pessaries in the treatment of uterine displacements. Whenever we treat anteversions and reduce inflammation to a point at which it is regarded as safe to undertake to restore the uterus to its normal position, whatever the mechanical appliance is that is employed, it simply relieves the patient by raising the organ up to where the circulation can be restored. Sometimes we can antevert the uterus still more than it is anteverted, and yet give entire relief. The principle is not simply to correct the position of the uterus so far as flexion or version is concerned, but to raise the organ up in the pelvis to a point at which circulation can go on unimpeded.

DR. W. M. CHAMBERLAIN thought the paper covered a range of inquiry which all would do well to prosecute. He referred to a single illustration of one point, namely, the propagation of force from the contraction of the diaphragm and connective-tissue movements in the upper part of the abdomen. Whoever has had occasion to watch the movements of the pelvic viscera in a patient anesthetized for operation, and has noticed the result when an attack of vomiting came on, would recognize the fact so well brought out, that the maximum downward pressure is not exerted into Douglas' cul-de-sac, but into the space anterior to the uterus and upon the posterior wall of the bladder. So far as his observation went, the extrusion of the vaginal wall had always been much more in the form of a cystocele than in the form of a rectocele.

The dynamics of uterine movement have wide relations to educa-



tion and habits as well as to the cure of the sick, and he thought that manifestly any great departure from the order of nature, as is frequently dictated by fashion, was likely to be mischievous. For example, the influence of affected posture, what is sometimes called the "Boston tip," in which the body is bent forward and the abdominal walls are relaxed, he believed was prejudicial to good health. The influence of high-heeled boots he also believed was a factor worthy of consideration. He was especially pleased with Dr. Wylie's statement concerning the influence of the vital musculo-connective-tissue pressure. While Dr. Emmet had spoken most judiciously of antelexions depending upon a greater or less amount of pelvic inflammation, he thought there were antelexions, but more especially anteversions, which are the source of great discomfort, which never can be cured by any mechanical appliances, because they depend essentially upon an empty state of the connective tissue. And he believed that in many of those women who are bedridden, the displacement continues because they are bedridden, and that the one means of restoring them is to restore the normal condition of the connective-tissue system.

DR. WYLIE, in closing the discussion, said, with reference to Dr. Chamberlain's remark, concerning the effect of pressure of the diaphragm being chiefly expended upon the bladder when the patient was anesthetized and placed in Sims' position, that Dr. C. would recollect that in Sims' position the curve of the spine is mainly taken out, and that the greater part of the force is directed downward more in the indirect line of the bladder. In the upright position he thought that the pressure was so equally distributed that there is a proper balance between the two, and that the uterus settles in the pelvic cavity in accordance with this equalized and balanced pressure.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF EDINBURGH.

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*January 31st, 1883.*

DR. MILNE MURRAY read a

NOTE OF A CASE OF INVERSION OF THE UTERUS OCCURRING IMMEDIATELY POST-PARTUM AND RESULTING IN SPONTANEOUS AMPUTATION.

The case occurred in the practice of Dr. Merryweather, Carlisle. The patient was in her seventh labor, which ended naturally, but twenty-four hours afterward the uterus was found inverted. It was replaced, but always became reinverted, and ultimately a mass about the size of the fist was expelled.

No bimanual was made.

THE PRESIDENT said that cases of spontaneous amputation were rare, and that the specimen would require a careful examination to determine that it really was the inverted uterus.

DR. HART thought it was certainly a fibroid tumor which was expelled during the puerperium, and not a case of inversion at all.

DR. BARBOUR asked whether a fibroid of that size in the cavity of the uterus would have not interfered with the normal course of pregnancy, or at least have occasioned hemorrhage.

DR. DAVID LINDSAY reported a

CASE OF TWIN, WITH EXOMPHALOS AND OTHER DEFORMITIES.

The following case occurred two years ago. I took notes of it at the time, and put the specimen to be considered presently into methylated spirit, with the intention of reporting it at length. Not doing so, however, just then, the notes and specimen have remained until now, but both are happily in a state of very good preservation.

To begin with the circumstances relative to the confinement. On the 26th January, 1881, I was called to attend Mrs. C., aged about 34, residing at Flockton, near Huddersfield, a multiparous woman, in labor for the fifth time. I set off as quickly as possible, the place being about three miles distant. On arrival I found the case advancing satisfactorily in the first stage, the os uteri dilated to about the size of half a crown, but easily dilatable. Head presenting. The pains were coming on regularly, and were of moderate severity. After waiting about an hour, the os was fully dilated, the membranes ruptured, and there was a very copious escape of liquor amnii. The pains now increased in intensity, and about three-quarters of an hour sufficed to have full dilatation of the perineum, when, during one very severe pain, there was expelled a full-sized, healthy child, alive, very vigorous, and quite normal in every respect. I then administered 40 minims of liq. ext. of ergot, and waited about twenty minutes for the expulsion of the placenta. There was no hemorrhage. On making a vaginal examination I easily felt the root of the cord with the index finger, and so proceeded to remove the placenta from the vagina. The large mass of placenta came readily enough for a little distance, but I then felt something catch. On making a more minute and higher examination, I perceived that the membranous part of the placenta extended into the os and was there firmly held. On introducing my finger through the os I detected a presentation of some sort, but which was certainly somewhat puzzling. After a little I thought I could make out the sharp edge of one of the cranial bones, the whole thing appearing much squashed up. The uterus didn't seem to be sufficient large to contain another full-sized child, but was quite big enough for a small child squashed up, and this was the conclusion at which I arrived.

I administered another dose of ergot and waited until the uterus regained its action. This it did in about half an hour. On making a vaginal examination I felt a presentation, but didn't distinguish any part of a child in a normal state, only the cranial bones, as before. The diagnosis of another fetus was now, however, placed beyond doubt, the impossibility of its being alive being likewise certain.

With the aid of a few pains there was expelled a bag consisting of a placenta with unruptured membranes attached to the membranous part of the other placenta, which of course preceded the bag. On slitting up the membranes I discovered the specimen now before you, and which was bathed in but little fluid. I didn't preserve the placentæ, only noted their relation to one another. With some little difficulty, however, I succeeded in obtaining the child. I judged it to be about six or seven months developed, and this caused me to reflect. About two months before her confinement, viz., 21st November, 1880, the woman was carrying in front of her a large can filled with milk. As she did so the can rested on her abdomen, and, as a matter of course, on the most protruding part. She stumbled, fell, and the can was driven forcibly against the upper part of the uterine region. She felt some pain at the time, but after resting a little she was able to go about again.

In the course of a day or two, however, she noticed an eruption over the uterine region in front, and this, coupled with the fact that she was then suffering some inconvenience from piles, induced her to seek some medical advice. Accordingly, I saw her on 25th November, and found the eruption to be vesicular in character. This yielded to very simple remedies, oxide of zinc ointment locally, and a few laxative powders. I likewise gave her some ungt. gallæ et opii.

From this to the time of her confinement she felt no unusual inconvenience from the uterine tumor. She made an excellent recovery from her confinement.

As regards the specimen, it is peculiar in having six digits on each hand and also on each foot—instances of over-development. There are also instances of arrest of development—exomphalos, double hare-lip, and cleft palate.

*Remarks.*—The most feasible view appears to be that the child born dead was killed by the accident which the mother sustained about two months before her confinement. That this was so is strengthened by the fact that shortly after the accident there was a sign of local disturbance, as indicated by the eruption over the uterine region. Seeing that the dead child was expelled after the living, it would in all probability occupy the highest part of the uterus, and thus be more likely to be affected by the accident. As usual, no putrefaction occurred, and thus the fetus could be retained without producing constitutional symptoms indicative of absorption of putrid matter. That putrefaction does not occur is doubtless explained by the fact that there is no access of atmospheric air. The assumed position of the child in utero is the most likely to exclude it from the atmospheric influence. If in any position in the uterus air could get to it, certainly the upper part, and with another child intervening between it and the os, would be the most unlikely. That the death of the child did take place some considerable time before delivery seems probable from the appearance of the child—six to seven months developed.



There being two placentas, and these only attached by their membranous parts, would, one should think, make the death of one child less liable to affect the development of the other than if there had been only one placenta.

The dead child, now putrid, lay in the uterus without apparently giving rise to any other symptom, after the primary local disturbance, save a greater enlargement of the uterine cavity than if there had been but the living child.

The double hare-lip, cleft palate and exomphalos are worthy of note as marks of arrest in development; the supernumerary fingers and toes, on the other hand, as marks of excess in development.

PROF. SIMPSON thought it was very probable that the injury to the mother had caused the arrested development of the second twin. From the fact that the twins were in quite separate membranes, the placental circulation of the other was not interfered with. The fact that a perfectly healthy child was born along with the deformed one illustrated the fact to which Cr  d   had drawn attention—that the development of twins was quite independent. It was interesting to note the existence of exomphalos with deformities of the extremities. In the last cases shown to the Society it occurred with spina bifida and with anencephaly.

DR. PETER YOUNG remarked on the existence of backward curvature of the lower limbs with exomphalos.

DR. ROBERT BRUCE read a paper on

#### FOUR CASES OF RESUSCITATION OF THE NEW-BORN INFANT.

In this instance, DR. BRUCE related a case of asphyxia neonatorum where the persistent inflation of the lungs by his curved instrument restored the child.

DR. DICKSON thought an ordinary elastic catheter with the end cut off served all the purposes of a special instrument, and was always at hand.

DR. CARMICHAEL mentioned a case where he had used the catheter successfully to resuscitate the child after a tedious forceps labor.

DR. RATTRAY of Portobello had found the inflation of air by applying the mouth directly to that of the child was all that was necessary, provided that the trachea be pressed on the esophagus to prevent the air passing into the stomach.

DR. BARBOUR asked whether the death of the children, after repiration had been restored, might not be due to a head injury. In a case of turning in a rickety pelvis, he had resuscitated the child by keeping up artificial respiration by Schultze's method for twenty minutes. The breathing was spasmodic, and ceased again in five hours. There was a deep rickety furrow on the head.

PROF. SIMPSON thanked Dr. Bruce for his interesting communication. His practice in restoring the asphyxiated infant was first to hold it up by the heels to allow any fluid to run out the air-passages, and then perform artificial respiration by Schultze's method. The danger of blowing air into the lungs was that the lung might be injured by the forcible distention. The subsequent death of the infant in two of Dr. Bruce's cases might have been due to this.

DR. BRUCE, in replying, thought that the method of inflating the

lungs immediately was very crude. In using his instrument, he breathed the air into the lungs as quickly as it could be done comfortably. He thought the danger of producing emphysema was exaggerated.

DR. PETER YOUNG read a paper on

DANGEROUS HEMORRHAGE FROM THE EXTERNAL GENITAL ORGANS  
DURING AND AFTER LABOR,

of which the following is a brief abstract.

In the great majority of cases, bleeding during or after labor is intrauterine, and is readily controlled by suprauterine pressure. Sometimes, however, when the bleeding has its origin from a tear in the cervix, this treatment does not suffice, and plugging of the vagina, in the first instance at all events, is urgently required. Occasionally, but still more rarely, alarming and even fatal hemorrhage may occur from laceration of the vulvar orifice at the vestibule. The submucous tissue between the urethra and clitoris consists largely of spongy erectile structure, and when torn even to moderate extent, is apt to bleed profusely. Of the latter form of hemorrhage he gave the histories of two cases.

In the first case, that of a multipara who was attended by a midwife, he was called in, owing to persistent bleeding, after the child and placenta were expelled. When seen, the patient was almost pulseless and deadly pale. The uterus was firmly contracted, and the hemorrhage had ceased. To insure immunity from further loss of blood, the vagina was plugged and a firm compress laid on the vulva. Notwithstanding the vigorous application of the usual restoratives, the woman died in a few minutes, and before arrangements could be carried out to perform transfusion. On post-mortem examination, the source of the bleeding was found to be a tear of the vulvar orifice extending from the left side of the urethra up towards the clitoris. Numerous venous sinuses and two or three small arteries were lacerated.

In the second case, a primipara, the child was born a few minutes before Dr. Y.'s arrival. The patient was pale, anemic and in a fainting condition. The uterus was firmly contracted around the placenta, and the bedclothes saturated with blood. On exposing the vulva, blood was seen flowing freely from the neighborhood of the symphysis, which was at once checked by placing the finger on the spot, and exercising steady pressure against the subjacent bone. The expulsion of the placenta was proceeded with in the usual way, the finger being still kept applied to the bleeding point. On careful examination, the vestibular tissue was found to be lacerated much in the same way as in the first case. To prevent further hemorrhage, a couple of metallic sutures were inserted and a compress of cotton applied. The sutures were removed on the seventh day. The patient made a good, but slow recovery.

In these cases it is to be noted that pressure on the uterus increases the hemorrhage, owing to the free anastomoses of the veins

of the generative tract and the absence of valves, local pressure, and the application of styptics in the slighter cases, being the only means of stopping the bleeding. With regard to the etiology, the lacerations were probably due partly to rapid expulsion of the child's head, but chiefly to a friable condition of the vulvar tissues.

PROF. SIMPSON had never seen a case in which hemorrhage from vaginal or cervical laceration had proved fatal. In a case of hypertrophic elongation of the cervix, the laceration had produced considerable hemorrhage, but none so serious as to require stitching of the pudenda.

DR. BRUCE said the Fellows were indebted to Dr. Young for bringing this complication of labor under their notice, on account of its rarity. His paper would enable them to treat it satisfactorily.

DR. GORDON thought that plugging the vagina was the best mode of treatment.

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February 14th, 1883.

DR. W. L. REID, of Glasgow, read a paper on

A NEW FORM OF BIVALVE SPECTULUM,

which appeared in the March number of this JOURNAL.

OBSTINATE VOMITING IN PREGNANCY.

By DR. W. A. BROCK, Glasgow.—He first passed under review the various theories as to the causation of the vomiting of pregnancy. Bretonneau, of Tours, considered it sympathetic in its nature; Dr. Graily Hewitt believes it to be due to flexions of the uterus; Dr. Henry Bennett considers that inflammatory condition of the cervix is the *origo mali*, while Barnes asserts that it is produced by the stretching of the muscular fibre and the uterus by the growing ovum. Dr. Brock then briefly criticised these views, pointing out the difficulties in accepting any of them. In the three cases which came under his own notice, the occasional occurrence of albumen was the point he laid most stress on. In his three cases no remedy had a good effect, and he was driven to induce labor and with a successful result as regards the sickness. The albuminuria also disappeared. As to the causation of this obstinate vomiting, he himself held that it was a mere idiosyncrasy of the individual.

DR. PETER YOUNG thought the Fellows were indebted to Dr. Brock for taking the trouble to bring this subject under their notice. His account of the etiology was not satisfactory. To say it was an idiosyncrasy did not convey any idea as to the cause. It was due to a greater impressibility of the nervous system in some individuals, which made them more susceptible to a peripheral irritation. It might be due to a condition of the muscular fibre, or to a congested state of the ganglia outside the uterus—either the ganglia immediately beside the uterus or those of the hypogastric plexus. He thought the analogy of exophthalmic goitre a very happy one; he had found the cervical ganglia congested in a case



of exophthalmic goitre. It was possible that a similar condition might, in cases of obstinate vomiting in pregnancy, be found in the ganglia beside the uterus. As to treatment, he had found the tincture of aconite (recommended by Hodge) in doses of two to three drops beneficial.

PROF. SIMPSON said that one objection to the theory of the vomiting being due to an idiosyncrasy was that it was not always present in all the pregnancies of the same individual. He thought a local cause should always be looked for. Copeman's treatment was beneficial in cases where the membranes were adherent. He hoped that Dr. Brock would continue his investigations on this important subject.

#### THE PROPHYLAXIS OF OPHTHALMIA NEONATORUM.

By PROF. A. R. SIMPSON.—After summarizing the literature of the subject, and indicating the importance of attention to it, based on the fact that in thirty-three per cent of blind people, the blindness was attributable to it, Dr. Simpson went on to trace the development of the prophylactic treatment of this serious malady. Abegg, in Danzig, was the first to wash out with pure water the eyes of all new-born children in his Lying-in Hospital. Bischoff, of Basle, and Schiess, did the same, but used an antiseptic instead of pure water, viz., salicylic acid or thymol. To Cr  d  , of Leipzig, is, however, due the credit of directing special attention to it, and showing the value of prophylaxis, as from 13.6 per cent in 1874, his cases sank to 0.5 per cent in 1880.

His matured plan was, to wash the eyes first with pure water, and then to apply, with a glass-rod, a two-per-cent solution of nitrate of silver.

In his own term of service at the Maternity, Dr. Simpson had employed Cr  d  's method with the result of only 1.5 per cent of the children having ophthalmia and that in a mild form.

DR. CROOM said that for the last five years he had used the same treatment after the disease had showed itself. He had tried, for a time, the prophylactic measures of antiseptic injections, but with no special result. Ophthalmia was, in his experience, so rare that he did not think the prophylaxis was called for.

DR. ROBERTSON thought that the cause of ophthalmia was sometimes mechanical injury to the eyes, as in careless examination during the labor.

DR. CRAIG and other Fellows called in question the statement that this was a cause.

DR. WILSON had found the three most common causes were cold, leucorrhea, and gonorrhea.

DR. MILNE MURRAY had tried, in one case of advanced ophthalmia due to gonorrhea, a solution of nitrate of silver—75 grains to  $\frac{3}{4}$  i., and with good result. Of twelve cases discharged from the Maternity which came under his notice, three had ophthalmia. These cases were, however, from the poorest class of patients. In all of these cases, the strong solution of nitrate of silver had cured the disease.

PROF. SIMPSON said he would recommend the prophylactic treatment as a routine practice only in a Maternity. In private practice,

its employment might be restricted to cases where gonorrhea was suspected.

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*February 28th, 1883.*

DR. SKENE KEITH showed a large

#### FIBROID TUMOR

which had been removed by Dr. Thomas Keith on the previous day. The patient was about fifty years of age. The tumor had been growing for several years; seven years ago it was almost up to the level of the umbilicus. Serious hemorrhages called for its removal. The uterus was removed with it, the clamp embracing the cervix and the top of the vagina. The removal of the tumor occupied twenty-three minutes. As the closure of the abdominal wound required a great many sutures, the whole operation lasted one hour and ten minutes. The tumor weighed twenty-seven and one-half pounds, and discharged four imperial pints of blood on its being divided. The patient stood the operation well: pulse and temperature this morning normal.

DR. CROOM read a paper on

#### SOME RESULTS OF OBSERVATIONS MADE BY THE GRAPHIC METHOD OF THE VARIATIONS IN BLADDER-PRESSURE DURING LABOR.

PROF. SIMPSON drew attention to the shortness of the waves in the first stage, and that they increased slightly in intensity as the stage advanced. The cause of these waves was not plain, unless they indicated uterine contractions. In the second stage, it was difficult to exclude the action of the abdominal muscles. Whatever the cause might be, it did not affect the value of the observation that there was an intermittent variation in the bladder-pressure.

DR. CHAPMAN asked whether the fall of the wave might not correspond to a relaxation of the abdominal walls due to an expiratory movement, the muscles momentarily ceasing to act as a counter pressure to the uterine contractions.

DR. CARMICHAEL said that the Society was indebted to Dr. Croom for his sound paper on this important subject. This graphic method opened up a new field of inquiry. There were, however, several fallacies to be eliminated.

PROF. SIMPSON said that the intermittency was of interest, whatever the cause might prove to be.

DR. CROOM, in replying, said there could be no question as to two points: (1) That a manometer in the bladder records a variation in the pressure of the bladder-contents during a pain, and (2) that the pressure takes the form of intermittent rises with an almost complete fall between them. With regard to Dr. Chapman's explanation, he would draw attention to the fact that the respiratory movements had no influence on the manometer as long as no pains were present—the stilette traced a straight line.

DR. CROOM read for DR. ANDREW L. CURRIE, of Sydney, a paper on

## THE USE OF CHIAN TURPENTINE IN CASES OF UTERINE CARCINOMA.

PROF. SIMPSON said that this subject of Chian turpentine had been already before the Society. Then he had stated that the results of its trial in his ward had been of so little value that he had discontinued it.

DR. CHAPMAN said that Dr. Macdonald's experience was that it relieved pain, diminished fetor, and increased hemorrhage; it had no effect on the growth of the tumor.

DR. CHURCH said that the fact that its use increased the hemorrhage militated against Clay's theory that it diminished the cell-growth by checking its blood-supply.

DR. WYLIE suggested that the increased hemorrhage might be explained by the action of the ether, as an ethereal solution was employed.

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March 28th, 1883.

## SUPERINVOLUTION OF THE UTERUS.

By PROF. A. R. SIMPSON.—The uterus may become smaller than normal in a woman before the menopause. Thus, in phthisis, in paraplegia, as the result of pelvic inflammation and of endometritis and metritis, the uterus may become small. This is properly an atrophic process. The small uterus known as the superinvolved uterus follows child-birth or abortion, and is thus in its etiology separable from the atrophic forms given above.

*Pathology.*—The uterus may vary in size from less than two and one-half inches to such a degree that it cannot be defined bimanually.

The ovaries may be atrophic, and the vagina narrowed at the top as in old women. Frommel met with it in twenty-nine out of three thousand cases—a proportion Müller, of Berne, thinks too low. Prof. Simpson had met with it in twenty-two out of thirteen hundred cases (1.7 per cent). The ages in his own cases ranged from twenty-one to forty (average, thirty).

*Etiology.*—Constitutional disease predisposed to it, *e. g.*, phthisis, Addison's disease, and anemia. Flooding after labor predisposed to it, and he had seen it associated with puerperal insanity. Overlactation and local inflammatory conditions were also important factors.

The symptoms, physical signs, and treatment were finally passed under review, but nothing special was brought forward.

The following table gives the chief literature and the cases of superinvolution hitherto published:



	Number	Age	No of children	Time since last confinement.		Size of Uterus	Cause.	Complication.
				Years.	Months			
Private case	131	2	6	1	1	1	Hemorrhage.	
"	236	2	3	1	3	2	"	Retroflexion.
"	333	1	6	2	2	2	Daily loss during 11 mos. lactation	Phthisis.
"	426	3	....	5	2	2	?	Phthisis, senile colpitis.
"	530	1	....	6	1	1	Suppuration of breasts 3d week.	Phthisis, pronounced.
"	628	1	6	1	2	2	Superlactation.	Abscess in leg.
"	725	1	1	5	2	2	Lactation, persisting hemorrhage.	
"	830	1	1	6	2	2		Cervic. lacerat'n
			abortion six months after					
"	933	5	1	4	2	2	Hemorrhage.	
"	1028	3	3	1	1	1	"	
"	1140	1	3	6	2	2	"	Sarcoma of thigh
			abortion at 4th month					
"	1230	1	5	2	2	2	?	Retroflexion.
"	1329	1	....	8	2	2	?	
"	1435	3	5	2	2	2		
Ward Jour..	1528	2	2	7	2	2	Superlactation.	
"	1626	2	?	2	2	2	?	Lacerated cervix
"	1724	3	2	2	2	2	Hem. and lactat'n	
"	1822	1	....	2	2	2	Hemorrhage.	Phlegmasia cruris.
"	1923	....	1	6	2	2	"	Anteflexion.
"	20		2 abortions					Addison's dis.
"	21		Two cases in out-patient book; details not noted.					
"	22		22 in 1300 cases = 1.7% n'y					
Chiari .....	2336	1	8	2	2	2	Lactation.	
" .....	2428	1	1	2	2	2		Cerv. atrophied.
Chiarleoni..	2526	3	1	....	2	2		General atrophy, nervous disease
" .....	2628	1	4	....	2	2		Parametritis diphtherica.
Jaquet .....	2725	2	4	....	2	2	Suppuration in breasts	Do.
" .....	2830	1	1	6	2	2		
Whitehead	2939	4	11	absent			Hemorrhage.	

<sup>1</sup>This patient had been married seven years, and had five children in six years, flooding with the last. She had also slow speech, staggering gait, and general drowsiness.

No. 14 had nursed her last child fifteen months. Her mother and aunts ceased to menstruate short of 40.

Frommel also mentions twenty-nine cases, but as he neither gives the size of the uterus nor the cause, they are not mentioned in the above table.

NOTES ON A CASE OF OVARIOTOMY, WHERE THE PEDICLE WAS LONG AND TWISTED.

By DR. J. MILNE CHAPMAN.—The patient, twenty-seven years of age, had suffered for a year from repeated severe attacks of pain, and for three months she had noticed a swelling in the lower part of the abdomen. Under chloroform it was found possible to push the tumor, which was about the size of a child's head, up to above the level of the umbilicus, and when this was done there was felt to be a pedicle connecting it with the right side of the uterus. The left ovary was enlarged to about twice the normal size. Ovariectomy was performed, and both ovaries removed without the use of the spray or of gauze dressings. The wound healed by first intention, and the patient returned to her home on the twenty-first day after operation. Two and a half twists to the left side and backwards were found on the pedicle. The pedicles on both sides were secured in two pieces by means of Chinese silk. After alluding to the various explanations offered to account for the rotation of ovarian tumors, Dr. Chapman pointed out that in this case Lawson Tait's theory in regard to the effect of the alternate filling and emptying of the rectum was not applicable, as the rotation was in the contrary direction to that noted by Tait as being the usual one with right-side tumors, and it was suggested that the bladder might have caused the twist by acting on the lower portion of the tumor which was angular in shape and solid. After pointing out the great risks attendant on the twisting of the pedicle in such cases, Dr. Chapman took occasion to advocate the early removal of ovarian tumors, and he referred to and repeated the arguments and reasons for such a course given by Dr. Granville Bantock in his book "A Plea for Early Ovariectomy."

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

*Meeting, Wednesday, March 8th, 1883.*

DR. H. GERVIS, *President, in the Chair.*

### CAST OF FEMALE BLADDER.

DR. AVELING exhibited this specimen. The patient suffered from retention of urine for four days after delivery. This was relieved by the catheter, and the bladder was subsequently washed out. Three weeks after delivery the cast exhibited, which was formed by exfoliation of the vesical mucous membrane, was passed. Fifteen months afterwards, the patient still suffered from incontinence of urine, but except for this, and a recto-vaginal fistula, was well.

MR. HOPKINS WALTERS had seen a similar case, due to retention, which had lasted four days, from retroversion of the gravid uterus. The cast was passed the sixth day after relief of the retention. The patient recovered without further vesical trouble.

#### FIBROMA OF OVARY.

DR. JOHN WILLIAMS exhibited a solid ovarian tumor removed by him. It was pear-shaped, about three inches in diameter at its thickest part, and consisted of white fibrous tissue, with areas of mucoid degeneration, and in the centre extensive calcareous change.

THE PRESIDENT remarked on the rarity of such tumors.

#### TUMORS REMOVED BY ABDOMINAL SECTION.

DR. BANTOCK showed a dermoid ovarian cyst, a specimen of double hydro-salpinx, and five uterine fibroids, which he had removed by abdominal section. In three of the cases, the tumors, weighing upwards of seven pounds, four pounds, and two pounds respectively, were removed on account of pain, there not being much hemorrhage. In one, on account of hemorrhage, he removed the ovaries. This was followed by metrostaxis lasting four weeks, and, at first, diminution in the size of the tumor. Three months after operation, the uterus had regained its former size; the hemorrhage recurred, and gradually increased, and therefore he removed the tumor, which weighed three pounds, and presented cystiform degeneration. In the remaining case, the ovaries had been removed about a year previously by another surgeon, but this had been followed by increase in the hemorrhage, and no diminution in the size of the tumor. He (Dr. Bantock) therefore removed it. In cases such as these, he thought oöphorectomy could not come into competition with hysterectomy; for cystiform degeneration of uterine fibroids was as surely fatal as ovarian cystoma. He could not concur in the opinion that hysterectomy should only be done when oöphorectomy had been tried and had failed. He did not think much was gained by ligature of the uterine arteries; the collateral circulation was too efficient. He had now performed twenty-two hysterectomies, of which twenty had recovered, in none of which had "full antiseptic precautions" been used.

MR. KNOWSLEY THORNTON thought Dr. Bantock's cases illustrated the value of oöphorectomy. Removal of the uterine appendages had in each case been only imperfectly accomplished, and this accounted for the persistence of hemorrhage. Moreover, the tumors were undergoing atrophy, the cyst formation being part of the degenerative process. He had seen these patients when hysterectomy was performed, and their condition of health seemed to him so good that, without further information, he did not understand the reason for the operations. He thought that the condition of patients was not so good after hysterectomy as after oöphorectomy; after the former, there was a possibility of a permanent fistula or of a ventral hernia.

DR. SAVAGE said the condition of Dr. Bantock's patients was such as to justify the operation. The mortality was one in eleven,



not greater than that of ovariectomy. Battey's operation he thought detestable.

MR. DORAN thought long series of after-histories were needed before the profession could judge between the two operations.

DR. ROUTH thought oöphorectomy (except as a *pis aller*) a shameful and often useless operation, unsexing the patient, and failing to cure. He thought evidence was required in support of Mr. Thornton's assertion that the operations were imperfectly done. The atrophy of the tumors might be due as much to the age of the patients as to the oöphorectomy. The ill-health of the patient was such as to justify the operations in Dr. Bantock's cases.

DR. WYNN WILLIAMS had sent two of Dr. Bantock's patients to him, and thought the operation was thoroughly justified in each.

DR. BANTOCK said the amount of hemorrhage was such as to make the patients hopeless invalids, and he thought this justified the operation. Examination of the specimens showed that the ovaries had been thoroughly removed.

#### UTERINE POLYPI.

DR. WYNN WILLIAMS exhibited two polypi, one fibroid, the other of mucous intermixed with fibrous tissue.

DR. ROUTH mentioned that the tumor in the second case had at one time been taken for an inverted uterus.

It was referred to a committee for examination and report.

THE PRESIDENT then delivered an address, for which a vote of thanks was moved by Dr. R. Barnes, and seconded by Dr. Graily Hewitt.

#### TURNING IN CASES OF CONTRACTED BRIM.

A short paper on this subject, by DR. BURCHELL, was read. The author described a class of cases in which, after several easy deliveries, the birth of later children became difficult. Out of eight thousand deliveries, he had met with forty-five such cases. He attributed the progressive difficulty of labor to deposit of bone on the sacral promontory. In these cases, attempts at forceps delivery often failed, and then perforation was resorted to. He believed they were better treated by turning. Out of forty-five cases so delivered by him, he had saved the children in thirty-eight. He thought this practice was new when he first adopted it, and that still its advantages were insufficiently recognized.

DR. ROBERT BARNES had largely practised turning in cases of minor degrees of contraction of the pelvic brim, and formerly placed it between the forceps and craniotomy. He now thought there were few cases in which Tarnier's forceps were not superior.

DR. CHAMPNEYS said increasing difficulty of successive labors was accounted for by increasing size of the children and diminished power in the mother. Progressive diminution in the size of the pelvis had never been verified by measurement. Either forceps or turning, if applied to all children, would show a large percentage of success, although not really beneficial.

## REVIEWS.

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A PRACTICAL TREATISE ON THE DISEASES OF THE UTERUS, OVARIES AND FALLOPIAN TUBES, by A. COURTY, Professor of Clinical Surgery, Montpellier, France. Translated from the third edition by AGNES McLAREN, M.D., etc., with a preface by J. MATTHEWS DUNCAN, M.D., LL.D., etc. Philadelphia: P. Blakiston, Son & Co., 1883, pp. 802.

The above treatise has, in the original, passed through two large editions, been crowned by the French Institute, and doubtless faithfully mirrors the practice of a man who has had more opportunities for original research than falls to the lot of most special practitioners. A translation, hence, should be hailed with pleasure. The praise it receives, too, from so eminent a man as J. Matthews Duncan ought surely to be proof of great inherent merit, sufficient to give it at once a strong foothold in the van of gynecological literature. From a survey of the work as a whole, a favorable impression is left. Whilst the book, however, is almost encyclopedic, it is disappointing to find one important omission. Though page after page is devoted to hypertrophy and atrophy of the uterus and "ulceration" of the cervix, space could not be found for reference to laceration of the cervix and the operation devised for its cure by Emmet. Now, in the last fifteen years or so, no operation has been suggested by means of which more misery and suffering can be relieved. It is inexcusable, hence, not to mention it, even if the methods for its diagnosis are not known or resorted to, unless M. Courty is deficient in the diagnostic acumen necessary to determine the condition.

The work is not a treatise on the diseases of women, seeing that only those affections which localize themselves in the uterus, ovaries, and Fallopian tubes receive notice. The affections of the bladder, urethra, and vagina are only referred to where they are incidentally involved in affections of the upper organs. The work, hence, holds the same relation to gynecology in general that a treatise on the diseases of the chest or abdomen does to general medicine. Its utility, therefore, is limited to the hands of the specialist; perhaps even he will rarely refer to it, in this country at least, where what it contains can be found as well in more complete treatises. M. Courty's methods of treatment are, as a rule, eminently conservative. The necessity of general treatment preparatory to or accompanying local treatment is always well insisted on. It is noteworthy that, where in forming his opinions he is not guided by his own deductions, recourse is usually had to English and French sources, rarely to American. Yet it may be pardonable to remark that in no country are the diseases of women more thoroughly studied, and hence better understood, than here. It is not intended to give the impression that the work is behind the times; on the contrary, it is far in advance of other French books on the same subject, and as such will tend to better educate the average French practitioner. As to whether this translation will be much sought after by English readers is another question. There are weighty reasons why it should not, the main being the existence in English of many works of greater utility, because they are in

general more complete, and in particular instances, more exact. A brief analysis of the contents will best give a general idea of the purpose and scope of this work.

The first ninety-four pages, of an introductory nature, consider the anatomy, physiology, and teratology of the uterus and its appendages. They constitute an admirable résumé of our knowledge in these departments and are profusely illustrated. Following this comes the work proper, divided into two parts.

The first part takes a survey of uterine diseases in general. Their diagnosis, their treatment, their characteristics, each receives special attention. It is a pleasure to find the necessity of bimanual palpation insisted on, and it is matter of great regret, though not of surprise, since the work is French, to find the statement that the tubular speculum is most necessary to the gynecologist. The advantages of the duck-bill cannot be appreciated till one becomes familiar with its use: as yet this familiarity does not exist in France. It is but fair to add, however, that M. Courty, in advance of his compatriots, admits that the duck-bill is preferable in the largest number of cases, particularly for operating on vesico-vaginal fistulæ. Of what use, however, is this speculum, without the proper position? This we vainly seek for and miss. The statement that dilatation of the cervical cavity by spongetents is attended by no danger and little suffering must be excepted to. Even with all the precautions which M. Courty advises, it is unfortunately not rare for a cellulitis to develop. The form of tent most useful—the tupelo—is not mentioned. Lastly, artificial prolapsus of the uterus as a means of readily exploring the uterine cavity is recommended. This is hard to assent to, especially as such prolapsus is not necessary. By the conjoined manipulation, the cases are few where the average index cannot explore the whole uterine cavity, provided the canal has been sufficiently dilated.

The methods of treatment are well stated. Of the mechanical appliances, whilst the globe, the ring, and Zwank's pessaries are figured, Albert Smith's retroversion and Thomas's cup are ignored. The first three are worse than useless; the last two are so often valuable as to have become necessities. The topical means of treatment are the ones in ordinary use here, except that it is not usual to apply the solid stick of nitrate of silver to the fundus, and at times leave a piece in the uterine cavity.

The second part considers the uterine diseases in detail.

Chapter I. is devoted to menstruation and its disorders. These are treated of at great length. The usual operations for the relief of dysmenorrhea dependent on malformation of the cervix are well described. Where there exists congenital narrowing of the cervical canal, Courty divides it bilaterally with the knife, or else, having made an opening on either side of the os, he passes an elastic ligature through each orifice and os, and allows the ligature to cut through. By another method, he dissects triangular flaps from each side of the cervix, incises the os bilaterally, and then turns the flaps into each commissure. Whilst these operations are ingenious, they possess no advantage over the crucial incision with after-dilatation practised here, and yet subject the patient to greater risks. The subject of menorrhagia and metrorrhagia are then considered, but offer nothing out of the routine description.

Chapter II. considers displacements of the uterus and ovaries. This chapter is most complete and of interest. It is obviously impossible to do more than note a few of the more prominent points in Courty's treatment. In speaking of prolapsus, he rightly con-



denns any expectation of permanent cure from any form of pessary. Where the perineum is intact, a Hodge's lever pessary has given the greatest satisfaction. Where the perineum is defective, various pessaries, which take their *point d'appui* from without, are mentioned, but evidently Courty is not an enthusiast over them. One means he refers to—a tampon saturated with some astringent—is certainly the best and simplest palliative. The various operative methods devised for its relief are then described. Those of Sims, Simon, and Lefort find place in the description.

Courty's analysis of versions and flexions is very satisfactory, and his deductions perfectly sound. In some respects, his treatment is not satisfactory. Under anteversion, the pessary which has found most favor in this country—Thomas' cup—is not mentioned. For retroversion, after replacement of the uterus, Hodge's pessary, as modified by Courty, is recommended. This modification consists in the addition of a cross-bar, the object of which is to keep the cervix back. Where adhesions exist, the systematic, persistent tamponade of the vagina ought to find a place in treatment, but is not referred to. The sound is recommended for reposition. This procedure is not free from danger, and is not necessary nowadays when really efficient and not dangerous repositors are made. The value of intrauterine stems is well stated. Often powerful agents for good, they should never be used without taking every precaution till uterine tolerance has been established. In antelexions associated with conicity of the cervix and narrow os, Sims' operation is advised. For retroflexion, the galvanic stem pessary, combined with Courty's modification of Hodge, is indorsed. Inversion is next considered, with the various methods for reduction. M. Courty cannot recommend Thomas' method. His own consists of fixing the cervix by two fingers in the rectum, and making pressure on the fundus with the other hand. The fundus is thus, as it were, guided through the cervix. Where reduction is impossible, Courty amputates the uterus by means of an elastic ligature placed in a groove traced by the galvano-cautery.

Chapter III. contains a long account of acute and so-called chronic metritis; ovarian and tubal inflammation; peri-uterine inflammation: leucorrhœa in general, and uterine catarrh in particular: hypertrophy and atrophy; granulations and fungosities; ulceration and ulcers of the cervix. A general criticism called for is that the descriptions are needlessly complicated, and must tend to confuse the student. It is impossible to do more than note a few points of interest contained in this chapter. On page 537, the rare conditions peri-uterine adenitis and angioleucitis are described. These conditions M. Courty has for many years recognized: they often accompany puerperal affections; more frequently, however, they occur in a chronic form. Vaginal examination reveals behind and to the sides of the uterus little tumors, smooth or irregular, hard and sensitive. They are formed by "clusters of vessels or lymphatic ganglia tumefied and rendered painful by inflammation." Their existence has been verified post-mortem. As for leucorrhœa, about all the means of treatment at our command are enumerated. That recommended by Courty for leucorrhœa due to a catarrh of the uterine mucous membrane, whilst not peculiar to him, has yielded such good results as to be worthy of mention. The os uteri, if not open, must be dilated by a sponge tent, the uterine mucosa thoroughly washed with a very hot carbolized solution, and then the powdered nitrate of silver is to

be applied to the surface, or else a small crayon is to be left in the cavity. If this method seems hazardous, it has never appeared so in M. Courty's hands.

Repeated congestion and arrested involution are the main causes of hypertrophy. Whilst the condition of hypertrophic elongation of the cervix is considered a rarity by some gynecologists, and one at least contends that such is usually a laceration of the cervix, Courty is a firm believer in the process. In this respect, he follows Huguier. The pages devoted to the consideration of this condition are very interesting, and if some of the woodcuts (Figs. 340, 342, and 345) suggest laceration of the cervix, it is only a proof of the difference of opinion held in regard to hypertrophy.

"Ulceration of the cervix is one of the most common diseases of this organ." This opinion was formerly held in America; but now, how rare a true ulcer! Of course, the reason is apparent. What formerly were called ulcers are now recognized as the eroded, everted mucous membrane of a lacerated cervix. M. Courty, not recognizing the existence of this lesion, naturally is still lying in the ruts which American gynecology left long ago. When he uses Sims' speculum and Sims' position instead of the tubular speculum and dorsal position, and is willing by the aid of tenacula to roll in the edges of his ulcers, it is not too much to expect he will find ulcers of the cervix the least common of uterine diseases.

The remaining chapters are devoted to new growths of the uterus and appendages, hematocoele, and sterility. The various operations with their indications are passed in review; and the treatment advised, whilst conservative, is fully up to the times.

The translator has done her work well. Her constant aim has evidently been to do full justice to M. Courty's thought. The woodcuts which profusely illustrate the book are largely taken from other sources, though in each case the indebtedness is acknowledged.

E. H. GRANDIN.

DE LA CONDUITE A TENIR DANS LA PRÉSENTATION DE L'EXTRÉMITÉ PELVIENNE, MODE DES TESSER, C'EST A DIRE, AVEC RELEVEMENT DES MEMBRES INFÉRIEURES SUR LE PLAN ANTERIEUR DU FETUS. Par ADOLPHE OLIVIER, Ancien Interne des Hôpitaux et de la Maternité de Paris. A. Delahaye et E. Lecrosnier, Paris: 1883.

THE PROPER MANAGEMENT OF A BREECH PRESENTATION WHERE THE LEGS ARE COMPLETELY EXTENDED. By ADOLPHE OLIVIER; pp. 181, with eight woodcuts.

One would expect to find this variety of breech presentation dwelt on at some length in obstetrical treatises, seeing that it is the one offering the greatest obstacles to delivery. Rarely, however, is it referred to. M. Olivier has made it a special study, the results of which are embodied in this monograph. His observations are limited to cases where no pelvic abnormality exists. The work is divided into three parts. The first is devoted to a historical retrospect; the second to a description of his experiments, with the deductions derived therefrom; the third considers the proper management.

The first division is of great interest, containing, as it does, a terse epitome of the opinions held by various authors from early times up to the present. As might be expected, each had and has his favorite method of procedure. The one lauds the fingers, contending that by them alone delivery may be effected; another the blunt hook, still another the fillet, and, lastly, the forceps has strong adherents. M. Olivier has endeavored to bring order from

out of this confusion, and his experiments were successively made with each of the above artificial aids. These experiments were undertaken with a bronze pelvis, inside of which was attached a rubber uterus. Necessarily under these conditions he was limited to cases where the breech was engaged.

The first series of observations—four in number—were made with the blunt hook, and resulted in fracture of a femur twice before delivery could be effected. In the second series (eight observations), made with the fillet, he found that sacro-anterior positions could be delivered without injury, while in five sacro-posterior positions a femur was fractured four times. The reason of this difference appeared to be because in sacro-posterior positions the force exerted acted directly on the femur, whilst in anterior positions the groin was the *point d'appui*. Three attempts were then made, with success, to avoid this fracture by pushing the sacrum forward with one hand whilst traction was being made. The third series of eighteen observations were made with Tarnier's forceps. One point prominently brought out in the first part of the monograph is that the objection to the use of forceps is founded on the fact that they slip, or, if tightened sufficiently to hold, may injure the fetus. The truth of this is granted by Olivier, and his explanation is noteworthy, as well as the substitute proposed. On looking at the dorsum of a fetus whose legs are extended on the abdomen, it is noted that in shape the breech is triangular, the apex being at the anus. Naturally, then, the forceps when applied are apt to slip. If, on the other hand, we take a front view of a fetus similarly fixed, the shape, whilst triangular, is so in the obverse—the apex being at the heels, the base at the anus. Whence Olivier advises and in his experiments practised application of the forceps to the thighs instead of the breech. His observations were successful in that the forceps could be so applied, did not slip, in no way injured the fetus.

The remainder of the book deals with the proper management of breech cases before labor, at labor when the breech is above the brim, when it is engaged, when it is at the vulva. The procedures recommended are those usually followed in this country, except that where interference is called for, Olivier advises application of the forceps over the trochanters. This portion of the work is richly illustrated with personal cases. One more point only can be noted. Where the breech is at the vulva, legs extended, what is the proper procedure? The method advised is called the *bi-rectal*, and is practised as follows: Standing on the right of the patient introduce two fingers of the right hand into the patient's anus and one finger of the left into the fetal anus. Let the right fingers push the posterior thigh upwards and forwards, whilst the left finger pushes the anterior in the same direction. In two reported cases this method succeeded.

The work does credit to the author, and gives the obstetrician hints which in these cases he may be glad to possess. As such it is worthy of commendation, and is recommended to the perusal of all who wish to keep abreast of the times.

E. H. GRANDIN.

DES FIBROMES DU COL DE L'UTERUS AU POINT DE VUE DE LA GROSSESSE ET DE L'ACCOUCHEMENT, par C. CHAHBAZIAN, Docteur en Médecine de la Faculté de Paris. A. Delahaye et E. Lecrosnier, Paris: 1882.

FIBROIDS OF THE CERVIX IN CONNECTION WITH PREGNANCY AND LABOR, by C. CHAHBAZIAN; pp. 123.



Myomas of the cervix ordinarily differ little from those of the uterine body, but, when pregnancy supervenes, the former become of far greater importance. Whence M. Chahbazian has been prompted to note in this little monograph, whatever facts bearing on etiology, diagnosis, and treatment he has been able to deduce from a series of eighty cases collected from various sources. His researches have taught him that these tumors, when complicating pregnancy, are far more frequent in the cervix than the body: that in the former situation they are usually pediculated from the posterior lip. An inquiry into the changes which pregnancy induces shows that they enlarge in the later months concomitantly with the changes which take place in the cervix at that time. Not infrequently a softening occurs which may be either peripheral or central. Whilst after labor a diminution in size takes place, the author does not think they ever entirely disappear. The fact of their occasional spontaneous delivery before or after the child is also noted. Cases exemplifying each of the above conditions are introduced in this chapter.

Chapter III. is devoted to a consideration of the influence exerted by these myomas on, first, fecundation; second, pregnancy; third, labor. To give the main points in short compass: Fecundation may be impossible on account of the tumor filling the cervical canal, or, should impregnation occur, the presence of the tumor being a source of irritation to the cervix, may be the cause of early miscarriage; during pregnancy their main effect is to cause premature labor; at term breech presentations are frequent, protracted labor is not uncommon, leading several times to rupture of the uterus. All these points are illustrated by cases, and at the end of the chapter the results in the eighty cases are tabulated.

The next chapter is devoted to diagnosis and prognosis. Under the former heading all the usual means are given, and a prominent place given to a too frequently neglected means of diagnosis—abdominal palpation. In the eighty cases reported, the diagnosis had been made in only twenty-nine before the advent of labor. Under prognosis, the results are given in the case of seventy-eight mothers and sixty-two children, the maternal mortality being twenty-six, the fetal thirty-five.

The remainder of the monograph considers the proper mode of action when these myomas are present. It may prove of interest to summarize briefly the main points. If a diagnosis be made before pregnancy, seeing that the presence of a myoma is frequently a bar to conception, removal is indicated—an easy enough step in all cases except the subperitoneal variety. When diagnosed during pregnancy, the author counsels expectant treatment till symptoms arise, when they may usually be removed without fear of miscarriage. In eighty cases where this was done, the mother being between the sixth week and eighth month of gestation, six mothers went to term, one miscarried at the fifth month and died of eclampsia, one at the sixth week and died, cause not noted. As for the method of operation, the author prefers excision to torsion. When first discovered during labor, each case is a law unto itself. Of Chahbazian's cases, delivery either at term or prematurely took place in thirty-two, with nine maternal deaths and fourteen infantile. In twelve cases the tumor was removed during labor, with the result of one maternal death; of the children, one died after birth, one was dead before the operation, three were not viable; in two cases the result is not noted. Where it is impossible to operate, Chahbazian prefers forceps to version, statistical re-

sults being better for the former than the latter. Where both of these means are unsuccessful, there remain craniotomy, cephalotripsy, the Cesarean section. In six cases where one or the other of the two former were essayed, there were four maternal deaths; in the same number of Cesarean sections, five mothers died and three children were saved. Finally the author gives a resumé of the results of seventeen cases where an operation was undertaken after labor, at periods varying from a few hours to six months, with the result of thirteen recoveries.

Altogether this monograph is of value as containing in small compass points which are of necessity not dwelt on at any length in obstetrical treatises, and from it many facts may be gathered which might at some time prove of practical utility to the accoucheur. No reader of the French will regret time spent in its perusal. Perhaps this brief review, whilst by no means doing full justice to the book, may give useful working hints to those unfamiliar with the language in which it is written.

E. H. GRANDIN.

## ABSTRACTS.

1. Loehlein: Eclampsia at a late Period in Child-bed (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—According to the author's experience, two-thirds of the cases of eclampsia in child-bed occur in the first twelve hours post partum, the remaining third at a later period, usually within five or six days after labor. Only a few cases are recorded in which the disease appeared after that time. The further removed from parturition the attack is, the less likely is it to be concerned with that as a cause. To some newly arisen disturbance in the action of the kidneys should we look for an explanation in such cases. A case occurred in the author's experience in which a weak and anemic woman, after a forceps delivery, was treated with daily uterine injections of a one- to two-per-cent solution of carbolic acid for fourteen days. On the fifteenth, spasms occurred, but as the urine showed the dark-green color of carbolic acid impregnation, and as the spasms discontinued after treatment with hydrate of chloral, and omission of the carbolic acid, causation was attributed to the latter. (The solution used was, to be sure, a weak one, but the extremely unfavorable condition of the patient is to be taken into account, and hence this furnishes no general argument against the use of carbolic acid injections in obstetric practice.)

A. F. C.

2. Quinel (Marseilles): Indications and Contra-indications for the Use of Mineral Waters, Sea-baths, and Hydrotherapy during Pregnancy (*Annales de Gynécologie*, Sept. et Oct.).—It is necessary to remember that pregnancy is a physiological condition when woman is in a state of nature. The further she is removed from this state the greater is the tendency for it to become a pathological condition, in which it requires treatment and medical attention the same as any other form of disease. The most apparent and indispensable modifications to the organism during pregnancy take place in the genital apparatus, and particularly in the uterus. In regard to the treatment of any pathological condition which

may arise during pregnancy, he states the following "preliminary law:" "All medication which will favor congestion of the viscera, will predispose the individual to an abortion, or will cause morbid conditions to be present, and ought, therefore, to be contra-indicated." It is, therefore, necessary to know the properties of the water in the various springs and baths, its temperature, and the peculiarities of the patient before such therapeutical treatment will be at all suitable. The object of treatment should be: 1. To ameliorate the present condition of the patient. 2. Not to compromise the future. 3. To lead to recovery. Where such ends can be reached by the use of the proper mineral waters, they form an excellent therapeutic agent. Their use is contra-indicated: 1. When there is nothing abnormal in the course of the pregnancy—when it is physiological. 2. They are absolutely contra-indicated in patients who have heart disease. 3. When a pyretic condition is associated with the pregnancy. When the conditions are favorable to absorption of the essential elements of the various waters the effect upon the patient is often very pronounced. He gives the following list of waters, one or more of which may be serviceable in a given case: 1. The chloride of sodium and brom-iodurated. 2. The bicarbonated. 3. The sulphate combinations. 4. The sulphur waters. 5. The arsenical. 6. The chalybeates. 7. The copper waters. To these may be added two classes which have no definite action upon disease: 1. The weak salines. 2. The gaseous acidulated. The saline bicarbonates are useful in cases where albuminuria is present. The author thinks that eclampsia is prevented in some cases by their use. In affections of the skin and mucous membrane which are very likely to appear *de novo*, or to become exaggerated if they had previously existed, sulphur waters and sulphur baths are indicated. When syphilis is a complication, he recommends the sulphur and the ferro-arsenical waters. The following general conclusions are made in regard to drinking and bathing in mineral waters: 1. In a general way, pregnancy is a contra-indication to the use of mineral waters for therapeutic purposes. 2. This contra-indication disappears in the presence of certain diseases of gestation, which find curative or preventive powers in certain mineral waters. 3. The indications for thermal medication are much more numerous in the general conditions, the diatheses, the constitutional affections which may precede or accompany pregnancy. The concluding twenty pages of this unnecessarily protracted article are devoted to what he terms *thalassa-therapy* (*ῥ' θαλάσσοα*, the sea). [If we might be allowed to venture the judicial opinion, the bane of medical literature consists in the multiplicity of long articles which are turned out week after week, and month after month, in which, after diligent search, it is scarcely possible to find a dozen ideas. Articles of this type sometimes occupy fifty, seventy, or a hundred pages, which might be condensed into five, if matters irrelevant to the subject in hand, repetitions, and other inaccuracies were avoided. For those of us who are obliged to scan them it is tedious enough. Life is too short and too precious to be wasted in this way.]

AND. F. CURRIER.

**3. A. Martin** (Berlin): **Extra-Peritoneal Peri-uterine Hematoma** (*Ein Beitrag zur Festschrift, welche bei der Einweihung des Neubaus der Universitäts-Frauenklinik zu Berlin von den Assistenten derselben herausgegeben ist. Stuttgart, 1882*).—A few years ago, a class of patients fre-



quently met with at the Berlin Obstetrico-gynecological Clinic consisted of those who presented the following characteristics: They were young, usually strong, laboring women, with pale countenance and anxious expression; they complained of severe pains occurring during the progress of menstruation, or just after its cessation, located most frequently upon one side of the hypogastrium. In several of these cases, a tumor was noticeable extending along both sides of the uterus, and prominent at the superior strait. In such cases, another tumor would be found anterior or posterior to the uterus connecting, like a bridge, the developments upon the sides of that organ. There was no fever. Excesses in drinking or in sexual intercourse during or just at the end of menstruation were admitted, and within a few hours the severe pains came on. The treatment consisted of rest and cold applications, the tumor quickly disappeared, but exacerbations of the trouble were wont to appear at the next menstrual period. Gradually the tumor would disappear, and hardly a trace would remain after seven to ten weeks. In exceptional cases, a discharge of blood or pus would take place through the intestine, the vagina, or the bladder. The customary diagnosis in such cases was extra-peritoneal peri-uterine hematoma, and it was less frequently seen than the intraperitoneal form. Few cases of this trouble are recorded, and Virchow, in his edition of 1863, of "*Die krankhaften Geschwülste*," says he has never seen such a case upon the cadaver, apart from those who died from puerperal and traumatic causes. The author has collected and tabulated ten cases, four of which were met and treated by him. The tumors varied in size, sometimes being as large as a man's hand, and the destructive effects of pressure upon the surrounding tissues and organs, notably upon the peritoneum, were marked. The contents of the tumors were almost entirely blood-clots, and only slight hemorrhage followed their removal. Laparotomy was required in all of Martin's cases, and was followed by recovery in two of the four. Examination per rectum proved of great value in making the diagnosis. The author considers that the clinical symptoms of the disease are as follows: It appears suddenly and unexpectedly, with pains in the abdomen, hemorrhage, and symptoms of collapse. Peritonitis is excluded by the absence of high temperature and vomiting. As a rule, hematoma is caused by an accident to the genital organs at the time of menstruation. The parts are greatly congested, violence of some kind is applied, and the result is the rupture of a vessel. The blood does not have free exit, and therefore a part of it is converted into a tumor, choosing for its seat a location where the resistance is least. The consequences may be fatal, on account of acute anemia, or the patient may continue to suffer for a long time, with gradual resorption of the exuded material.

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**4. G. Leopold (Leipzig): Thirty Laparotomies** (*Archivf. Gynäkologie*, XX., 1).—The author tabulates thirty cases and appends epicritical comments from which we glean the following: Of the entire number, 17 cases were ovariectomies, 7 completed or attempted castrations, and 6 supravaginal amputations of the fibromatous uterus. The spray was used during the operations in the majority of cases, but was dispensed with in the last twelve; previous to operating, however, the steam spray apparatus was used energetically, as it was also the preceding evening in the room of the patient. The preparatory treatment consisted in the invigoration of the patient by good nourishment; a dose of castor oil the

day before the operation, on which day only soups were given *t. i. d.*, a full bath in the evening; no nutriment the morning of the operation, which latter was preceded by an enema of lukewarm water through the irrigator. The anesthetic used was chloral-chloroform, always administered by the same person. All antiseptic precautions were very strictly observed. Wherever it was at all possible, ovarian cysts were lifted out of the abdomen unpunctured. For the ligation of the pedicle, vessels, peritoneal suture, etc., only carbolyzed silk was used; for the closure of the abdominal wound, deep silver pearl sutures, and superficially carbolyzed silk. Lister dressing. After-treatment: During the first three days, small doses of coffee, bouillon with or without egg; in weakness or collapse, wine in very frequent doses. From the fourth day, strong soups, eggs with Malaga, wheat-bread, coffee and milk; after the first defecation, meat and fuller meals. On the morning of the seventh day, the first defecation was induced by castor oil, repeated every third day until the patient got up. On the eighth day, the dressing was changed the first time according to Lister, and the superficial sutures removed; on the eleventh or twelfth day, the deep sutures were taken out and, even if there was absolutely no reaction in the wound, another antiseptic protective dressing was placed, in order to avoid undesirable after-effects. On the average, the patients got up the fourteenth to the sixteenth day.

Of 15 completed ovariectomies, 4 died (septic peritonitis, 2; intestinal stenosis after bilateral ovariectomy, 1; exhaustion—patient had bilateral ovarian carcinoma—1); of 7 castrations, 1 (hemorrhage from submucous fibroma partly delivered into the vagina); of 6 amputations of the uterus, 2 (partly from the effects of the operation, partly from septic peritonitis; both were very anemic from hemorrhages which had recurred for years).

The author has never used the exploratory puncture, and thinks it unnecessary in the majority of cases; but should it, or tapping, be resorted to, strict antisepsis must be observed.

In reference to the indications for castration, the author notes the following: Hegar formulates as one condition, that previous to the operation both ovaries must have been carefully palpated, although this may be very difficult. Leopold, however, found that in some cases the most careful examination failed to furnish any information as to the position and connection of the ovaries, and yet they were easily found and removed by laparotomy; so that failure to fulfil Hegar's condition cannot form a counter-indication to the operation. The following were the conditions in the present series of cases. 1. Atresia of the vagina, amenorrhea, very great dysmenorrhea with rudimentary uterus, one cornu of which, together with tube and ovary, were inclosed in a congenital inguinal hernia. Only the displaced parts were removed. Result good. 2. Grave uterine or ovarian dysmenorrhea with hysteria (two cases). In the one, the trouble was of long standing and all possible medication had been exhausted. The operation was easy. Patient made a good recovery and remained free from symptoms for six months, when she began to relapse, and after a year the previous condition was re-established. L. ascribes the relapse to the neurotic family history and the prolonged existence of the morbid condition, and queries whether the performance of the operation four or five years sooner might not have had a better effect. In the second case, a similar clinical picture was present, but the hysteria was still in its first stage. Here, too, the operation was per-

formed as a last resort; the ovaries were easily removed; the patient recovered, and although the nervous and hysteric symptoms disappeared but gradually, the result was permanent. Hence the hope to secure permanent cure in old cases is slight. 3. Myomata of the uterus with profuse hemorrhages (4 cases). In one, there were numerous small tumors; all other treatment had proved useless; the result of the operation was all that could be desired. In the other cases the tumors were large (at least the size of a man's head). In one of the latter, removal of the glands was impossible; ligation of the vessels at the tumor (all in the domain of the internal spermatic); patient recovered; relapse after seven weeks. In the third case, only the right ovary was removable; the ligation of the vessels of the other was very difficult; the closure of the tense abdominal wall above the tumor by silver wire seemed to exert too great a pressure on the uterus and the submucous myoma, for within a few hours after the operation the patient collapsed, the myoma was partly delivered into the vagina; there was fatal hemorrhage from the uterine mucosa. In the fourth case, the ovaries could not be removed; only some pseudo-membranes were divided, and a number of vessels on both sides of the ovaries ligated. Result good: the hemorrhages and pains diminished and finally ceased; gradual spontaneous shrinkage of the tumor. On the strength of his experience, L. believes that large tumors may preclude complete castration, but raises the question whether a most complete atrophying ligation of the ovaries should not be attempted in all cases where removal is impossible.

With reference to the supravaginal amputation of the fibromatous uterus, the author gives a detailed description of the technique of the operation, the chief peculiarity of which is the leaving of a cuff-like projection of the peritoneum beyond the stump of the amputated tumor; this projection is turned inward over the two flaps of the stump and stitched in, thus securing the most complete possible separation of the abdominal cavity from the stump. The operation is divided into four stages. 1. Turning out of the tumor and application of the temporary elastic ligature. 2. Ligation of the broad ligaments, circumcision, and dissection of the peritoneum. 3. Ablation of the tumor and trimming of the amputated surface. 4. Turning inward of the projecting peritoneum; suture of the two flaps: deep bilateral circumligation of the stump so as to secure the uterine artery; removal of the elastic ligature; cleansing of the abdominal cavity; dropping of the pedicle; closure of the abdominal wound. L. states that the method of operation resembles that of Schroeder, but is improved by the essential and novel addition of the dissection and turning in of the peritoneum. He claims that it fulfils all the conditions required in a capital operation: simplicity, the greatest possible saving of blood, security against infection from the stump and against after-hemorrhages, and, finally, the simplest after-treatment as in the easiest ovariectomy (two dressings on the eighth and twelfth day). The last two cases thus treated, in each of which a tumor the size of a man's head was removed with the ovaries, and each requiring about thirty ligatures, progressed without fever, got up the first time on the fourteenth day, and could be discharged cured on the eighteenth to the twentieth day.



# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### A CLINICAL REVIEW OF THE METHODS IN GENERAL USE FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.

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BY

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FOR the treatment of Pott's disease of the spine there are so many different methods, for each of which special advantages are claimed, that it will very much facilitate the understanding of their merits if we classify them according to the mechanical laws by which they are distinguished and governed.

The disease is confined mainly to the bodies of the vertebræ when in the dorsal or lumbar regions, and it is to these regions that we will limit ourselves in this paper, not only because its treatment here is involved in more difficulty, and it occurs with greater frequency, but because the cervical region has a range of movement and possesses anatomical relations which renders it somewhat independent of the remainder of the spine, and which also renders its treatment a separate problem, so that, in referring to the spine in the course of the paper, it will be understood that it is in reference to the lumbar and dorsal regions alone.

The tendency of the spine, except in rare instances, is to bend forward at the seat of disease—to form a knuckle—and even if it has not progressed to this stage at the time it comes under the observation of the surgeon—the tendency to its formation exists from the inception of the disease, and must be combated by the splint employed.

It is readily understood that if the weight of the upper extremity be borne upon several columns (for such the spine may be considered, since the bodies of the vertebræ and the articu-

lar surfaces are the points of contact for the carrying and transmission of the superincumbent weight), and if one of these columns—almost always the anterior, composed of the bodies—becomes weakened or destroyed by disease so as to be incapable of retaining its form under the continuous pressure of the parts above it, the weight would very naturally cause absorption of the diseased structure and a corresponding separation of the posterior processes, accompanied by an unnatural protrusion. Such a condition would be represented by the dia-



FIG. 1.



FIG. 2.—Pott's disease, dorsal region.

gram, Fig. 1, which may be considered a representative one, because, even if the knuckle does not exist, all cases possess the tendency to its production.

Now take a thick strip of lead (chosen because of its inherent flexibility as approaching nearest to the representation of a spine), and, after bending it in the shape of a knuckled spine, Fig. 2, attach a weight proportioned to the upper and lower extremities to each end, Fig. 1, U representing the upper extremity, L the lower, and K the knuckle.

If such an arrangement were placed upright, it will readily be seen that the weight U would have a tendency to fall for-

ward, as in Fig. 3. But, in the human frame, this is prevented by the action of the powerful spinal ligaments and muscles, and consequently the constant bearing downward of the weight causes the curves to form as shown in Fig. 4, thus proportionately shortening the vertical distance between the head and pelvis. This is exemplified by any extreme case of Pott's that you may meet, every hunchback being a typical example of this tendency for the spine to protrude posteriorly and shorten the distance between its extremities, and Fig. 4 may be accepted as the typical diagram of the deformity in an advanced stage.

We may divide the essential requisites of treatment into two parts—*i. e.*, the arrest of disease and the obliteration of deformity, and it is in proportion to their combination in the methods of treatment that such a method is possessed of excellence.

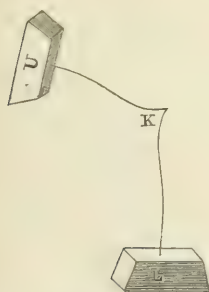


FIG. 3.



FIG. 4.

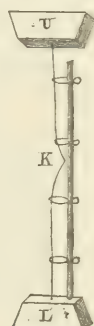


FIG. 5.

There are now four types of mechanical appliance in constant use by the profession in this country :

- 1st. Simple fixation.
- 2d. Symmetrical extension by traction.
- 3d. Local extension.
- 4th. Backward traction.

These all have for their object the arrest of the disease and prevention or obliteration of deformity, and it will perhaps tend to a better understanding of the whole subject if the different types are described and illustrated before proceeding further, and I shall for this purpose describe or quote from the published descriptions only those typical ones which are in the most favored use in this country.

*Fixation.*—This class of apparatus strives to produce suffi-



cient immobility of the diseased part to prevent further extension of the disease.

The braces which compose it do not aim to relieve the bodies of the vertebrae from weight or vertical pressure, but, by opposing firm support along the back to the tendency of the body to fall forward, prevent progress of the disease to a degree dependent upon the amount of rigidity they cause the back to assume. This will be sufficiently illustrated by taking the weighted lead strip already described and tying to it firmly a sufficiently strong support to allow the weight U to be sustained without further increase of the knuckle K,

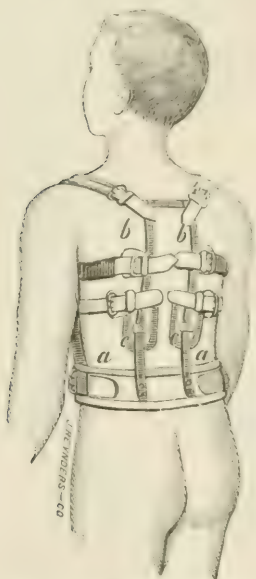


FIG. 6.—Washburne's brace.

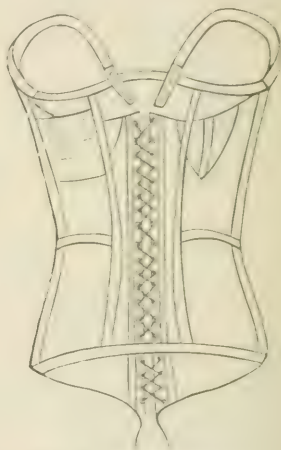


FIG. 7.—Knight's brace.

FIG. 5. This is exactly what a rigid fixation apparatus does, and it thus allows reparative action to proceed and prevents further extension of the deformity, assuming, however, that such a brace be sufficiently heavy and firm to permit this result. As a rule, however, sufficient fixation cannot be produced by such braces without possessing such weight as to be clumsy and burdensome; but still cases in practice will be met in which simple temporary support will be considered all that is necessary. There is no attempt to improve or restore the symmetry of the spine at the point of the disease, or to

remove the superincumbent weight from the bodies of the diseased vertebræ, but the braces of this class simply tend to prevent the body from falling forward beyond the normal upright line.

As prominent examples of this form of brace may be mentioned as a first class: the various leather or plaster splints, jackets, vests, corsets, etc., which do not require description, as they are simply rigid or removable moulds. As a second class, the light steel back-frames, removable at pleasure, good examples of which are Washburne's and Knight's, descriptions of which are appended.

"In the accompanying figure, *aa* is a steel band which passes half-way around the pelvis, just above the trochanters; *bb* are two flat bars of steel, parallel to each other, and curved upon their flattened sides to the form of the spine, to which the apparatus is fitted. These bars are curved a little less than the spine, so that when secured in position their elasticity will constantly operate to rectify the spinal curve. The cross-bar at the upper end of the parallel ones is firmly riveted to them, so as to cross the back just above the spines of the scapulæ. At the ends of this bar are affixed buckles to receive the shoulder straps; *cc* are two movable pads which slide upon the bars to which they are attached—these are best stuffed with cork fillings. These compresses are to be brought one upon each side of the projecting knuckle of spine and secured firmly by means of the screws provided for that purpose. Buckles are attached to various parts of the brace, by means of which it is secured to the front part of the apparatus, which consists, as shown, of a piece of twilled muslin, or other strong material, which covers the chest and abdomen and is provided with straps. Such parts as are in contact with the body are carefully padded.

Success with this apparatus depends entirely upon the faithfulness with which it is kept adjusted to the spine of the patient. It is only necessary that a gentle pressure should be maintained if it is constant. As the spine approaches its normal shape the curve of the brace will require to be altered from time to time. The steel has a soft temper, so that it will take the form."

Dr. James Knight,<sup>1</sup> of this city, employs in the Hospital

<sup>1</sup> Orthopedia, etc., by James Knight, M.D., 1874, page 323.

for the Ruptured and the Crippled, a fixation brace which is composed of a light steel frame encircling two-thirds of the body, of which a back view is presented, Fig. 7. Its description is as follows :

" The lower bars rest upon the crest of the ilium, and the two longitudinal bars extend below, thus giving a lengthened support, and obtaining greater firmness, so that if the caries should be in the lower lumbar regions no injury could be sustained from pressure. Shoulder-straps, well padded, pass from the front over the shoulders and button on the cross-bar, passing over the scapulæ and under the axillæ. Strong woven fabric incloses the front by lacing." " It will be observed that this brace gives lateral support, and not extension, giving a fixed, non-elastic support, thus arresting motion, and consequently attrition in the articulations of the diseased vertebræ."

There still remains a third form of fixation brace, which consists of a back frame partially secured to the body by an immovable dressing, Shaffer's plaster zone being the only representative of this class of which I am cognizant.

It consists (Fig. 8) of the pelvic band *A*, to which are riveted two perfectly plain uprights, *B B*, of annealed bar steel, which uprights extend to the shoulder pieces, *D D*, and are steadied at a point opposite the scapulæ by the cross pieces, *E E*. There are no "pad plates," "hinges," or "screws" about this apparatus at all, and the pads at *C C* are simple rolls of canton flannel stitched to the uprights by transverse threads shown in the engraving. *P* represents the location of the deformity, and *FFFF* shows the plaster zone securing the uprights in firm contact with the tissues lying over the transverse processes.

These comprise typical forms of fixation braces.

We next turn our attention to the second method of treatment.

2. *Symmetrical Extension by Traction*.—By symmetrical extension of the spine is meant the force which tends to convert the spine from a column to a chain, and so exerted that the bodies, the transverse processes, and the posterior articulating surfaces, are all stretched to the same degree.

This may be produced by any force which pulls the head and pelvis apart, and it is utilized in several forms in the treatment of Pott's disease.



The traction may be produced, *a*, by the *upper extremity* (the ancients used to tie a patient head downward to a ladder), by *b*, *horizontal* traction—which is the governing principle of the various extension beds and frames employed, a good account of which has been recently given by Dr. Benjamin Lee, of Philadelphia, in the *American Medical Transactions* for

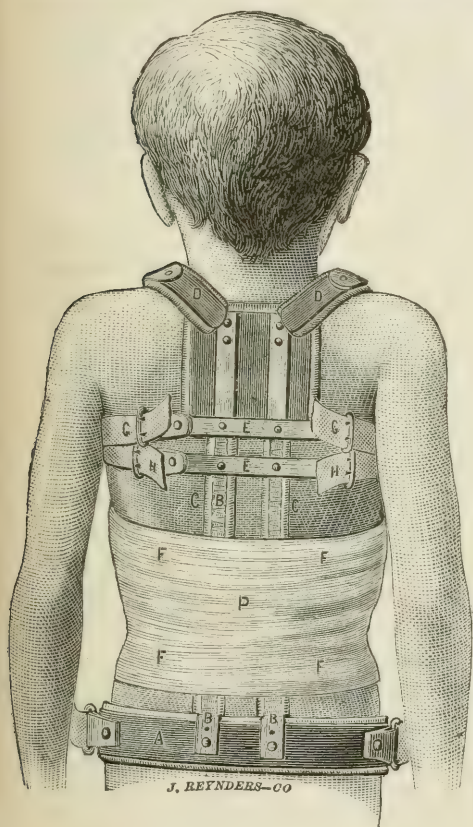


FIG. 8.—Shaffer's fixation brace.



FIG. 9.—Suspension frame.

1880—and by *c*, the *lower extremity*, which embodies the principle of suspension now so generally employed.

Suspension or the force exerted upon the spine by the part below the seat of disease, as a traction power in the treatment of spinal disease, has grown into great favor within the last decade, since the method of Prof. Sayre for holding the spine fast in the locality of the disease by means of the plaster-of-Paris

bandage has been followed by such excellent results, and has been so universally practised.

There is no difficulty whatever in the production of partial extension by suspension; the obstacle lies in so holding the spine when the patient stands upon the feet after the suspension that the diseased portion will still remain a chain, while the remainder resumes its ordinary condition as a column.

My own study of the action of the spinal jacket applied during suspension has led me to believe that its good effects are due to the fixation it produces and holds after the spine has been placed in more favorable curves by the process of the suspension, and not to any actual symmetrical extension being imprisoned and held fast.

Up to the seventh dorsal vertebræ, the jacket makes an excellent and ready fixation splint, but above that point Shaffer and Bigg have shown that it is inoperative, unless some extension head piece be also used.

Prof. Shaffer says<sup>1</sup>: "When suspension is employed nowadays to reduce the deformity of Pott's disease, it cannot, for reasons to be assigned, do more than modify the compensatory curves, unless ether be administered, after the plan of the German surgeons. If this be done, and it cannot, in my opinion, be other than dangerous, or at best useless; it will be found that the pathological curvature is more readily reduced, inasmuch as the reflex spasm yields when an anesthetic is administered. It is due to the presence of this muscular spasm during the process of suspension without an anesthetic that more harm is not done by the rejuvenated custom of using 'the gallows' in the treatment of Pott's disease."

Then<sup>2</sup> again, he says: "When extension by means of suspension is applied, as it frequently is nowadays, to the whole vertical column, from the first cervical vertebra down, in cases of spinal disease and the curvatures resulting therefrom, how much of the apparent change that takes place in the projection is due to the effect produced upon the projection itself?"

He then says "that it is a well-known fact that our height is increased in the morning after a few hours' rest in the recumbent position. Extension made through the healthy intervertebral

<sup>1</sup> Page 30, Pott's Disease.

<sup>2</sup> Page 39, *ibid.*

fibro-cartilages and the other structures binding the vertebral bones together, for a few moments only, is capable of lengthening the vertebral column to a very considerable extent. But when the extension is applied to the healthy spine, the normal curves are also obliterated, and the spinal column becomes straight as it is in early infancy. When the same force is applied where a portion of the vertebral column is diseased, the compensatory curves which result from the changed centre of gravity are also greatly modified, and the deformity is thus placed under far different relations to the healthy parts of the spine, and without, in my experience, affecting to any appreciable extent the true pathological curvature."

"The change is apparent rather than real, and the great increase in height noticed after a suspension of this kind is due to extensibility of the unaffected structures and the obliteration or modification of the compensatory curves. There can be no actual lengthening of the vertebral column, except that which comes from the elastic nature of the ligaments and fibro-cartilage."

He also says: "In any event, we would discard the plaster above the seventh dorsal, which limits its use to only ten of the vertebræ, and of these ten, the five lower dorsal and the five lumbar are the most easily controlled and supported by any apparatus, and, as shown by statistics, these ten vertebræ are not so likely to be affected as the other fourteen."

Heather Bigg, of England, in his late book,<sup>1</sup> in referring to suspension, states that "retching and vomiting not unfrequently supervened, the patient sometimes fainted before the completion of the splint, and there are on record one or more instances in which fatal results have followed."

"Such an ordeal is therefore a matter of gravity which it would be wise, even for a strong and healthy man, to weigh well before submitting to it; with much greater reason should it be cautiously and carefully balanced before being undergone by a nervous, impressionable, or delicate invalid."

"The changes the body undergoes when hung by the head and arms are made easily obvious by experiment.

"The shoulder blades rise up from their natural position, and do so in proportion to the share the arms are given in the allot-

<sup>1</sup>R. Heather Bigg, *Orthopragms of the Spine*, 1882, pp. 103.



ment of the body's weight between them and the head. The ribs rise as the shoulder blades do, and the chest enlarges during suspension.

"The spine is changed from a column into a chain, from a mutual repose upon each other through their facets to a condition of mutual dependence by their ligaments. Traction does not tend to restore natural curves to the spine; the make of both facets and ligaments do not accord with this; the former would be separated, the latter stretched."

"When let down, the resumption of the chest of smaller and natural capacity cause the jacket to be loose, and the wedge-shaped shoulder blades, descending, drive themselves between the back of the splint and the body, and thrusting the body forward through the splint, deprives the spine of the intimate support that this method professes to afford, and terminates all possibility of spinal traction, which the splint is especially supposed to continue after the cessation of suspension. These facts are proven by percussion, and if the splint be sewn down the front with evenness, and the patient removed, he can easily be replaced without suspension, the splint closing accurately along the line of section by raising the arms."

He further says: "Suspension gear, if used only for the erect position, is convenient, not novel. Continued traction is inadmissible, and further, it is unattainable by this process of jacketing. As a consequence, suspension is needless."

On the other hand, Prof. Sayre,<sup>1</sup> after mentioning the method of Mr. Davy for the application of the jacket, by suspending the patient in a hammock, face downward, and that of Walker, *i. e.*, placing the patient in a horizontal posture, having the plaster rollers cut into sections, like the many-tailed bandage, and laid around the body, mixing glue or shellac with the plaster to prevent its too rapid setting, says: "Having tried all these methods, I have found the original plan of suspending the patient by the head and the axillæ altogether preferable, as you can regulate the amount of extension applied with the exact precision required, and the position of the patient is so much more convenient for the accurate and comfortable application of the plaster bandages. Objections have been made by some as to its want of cleanliness; this need not be if the

<sup>1</sup> Orthopedic Surgery and Diseases of the Joints, 1883, page 467.

patient is properly cleansed when the jacket is applied; and at all times a towel can be easily applied to the skin by the use of a piece of whalebone, passing it under the shirt, from sternum to pubes, and then, taking the two ends, by slight movements it can be passed around the trunk, producing a gentle irritation to the skin, and thus removing all excretory matter.

“This same purpose can also be accomplished after the plan of Mr. Ogsden, of Liverpool, by putting on two shirts at the time of the application of the jacket. When desiring to change the shirt, the inner one is sewed fast to a fresh shirt, which is then drawn up in the place of the soiled one. This can be repeated at often as necessary.

“Others, again, have objected to the plan of treatment, on the ground of its cruelty, and charge it with obstructing respiration. This charge is absolutely false, as hundreds of instances have proved when the patients have fallen asleep while the plaster was being applied, and in all instances they express a degree of pleasure the instant the proper extension is secured. So far from interfering with the respiratory organs, it is proved by practical demonstration, in every case of spondylitis, that the inspirations and expirations are very greatly increased after the jacket has been applied. In fact, complete encircling of the trunk by an inflexible casing is the only means by which any support can be given to the spinal column, without restricting the respiratory functions.”

“In those braces which are secured to the body by means of flexible bands or cloths fastened in front, in order to secure the bars of the instrument in proper position, these bands are compelled to be drawn so tightly as to necessarily interfere with the respiratory functions.”

(To be continued.)

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SARCOMA AND MULTIPLE MUCOUS POLYPI OF THE UTERUS,  
IN A CHILD.

BY

THOMAS C. SMITH, M.D.,

Washington, D.C.

(Concluded from page 559.)

REFERENCE may properly be called to a few points in connection with this case.

*First.*—The existence of malignant disease of the uterus in a child three years of age. While reference is occasionally found in text-books to the fact that *cancer* has been observed in the uterus of children, I have been unable to find a case recorded in full of such an occurrence, and the specimen obtained from this case is the only one of the kind to be found in the Army Medical Museum in this city, as I am informed by Dr. Lamb. It is true that sarcoma has been occasionally observed in children. Thus Dr. T. G. Thomas closes a paper read before one of the societies (AMER. JOURN. Obst., 1874-5, Vol. vii., p. 48) with the relation of a case of sarcoma of the labium in a young child, and in the *Medical Record* of March 31st, 1883, is found mention of a case by Dr. Arkövy of congenital sarcoma of the jaw. Cancer of the ovary, too, has been not unfrequently found in children, but the occurrence of cancer in the uterus is exceedingly rare.

*Second.*—The association of such a multitude of polypi of a harmless character with a malignant disease in the same organ, has not, so far as my investigations go, its counterpart in medical literature. Even in adults the presence of multiple polypi is usually considered sufficiently rare to justify a place in the medical records of the day, but the union of malignancy and benignity is almost paradoxical. In the few cases I have been able to find where polypi were found in abundance, and malignant disease at the same time existed in the same organ, the polypi have partaken of the nature of the more serious disease. For instance, I find in the Transactions of the Obstetrical Society of London for 1868 (Vol. x., p. 224), the fol-



lowing notes: "Mr. Hereford gave the history and exhibited the specimens of the following case:

A child, aged ten months, was brought to the East London Hospital for Children, having some large, villous-looking growths attached apparently to the vulva. Opinion was divided as to whether they were syphilitic or cancerous.

On further examination, it was found that these growths extended inward and lined a large sac, which represented an enormously enlarged and dilated vagina.

Death shortly afterward took place, and at the post-mortem examination it was disclosed that the rectum, bladder, and urethra were normally situated.

The uterus (to which were attached healthy ovaries and Fallopian tubes) opened by its os uteri into the upper wall of the cyst.

The microscopic examination proved the growths to be medullary in their character.

Their first appearance could not be traced beyond, at most, four months.

There was no history of cancer ascertainable in the family.

The coexistence of malignant disease with an evident malformation of the vagina, is quite unique."

I find in the *Lancet* for 1877, Vol. i., p. 5, by Mr. John Clay, of Birmingham, under the title of "Clinical Remarks on Diffuse Sarcoma of the Uterus," a description which tallies very closely with that given of my case. After giving the history of seven cases which had been under his treatment in Queen's Hospital, Birmingham, he continues:

"The objective signs furnished by the patients were tolerably uniform. On palpation, the uterus was found to be enlarged. Per vaginam, the os uteri was soft and thickened, its condition otherwise being normal, but invariably patulous, readily admitting the finger. The cavity of the uterus was enlarged, permitting the finger to move easily to explore the uterine cavity. One part of the uterus was felt to be thickened—cushioned as it were; and this part was rough to the touch and largely studded with prominent growths, varying in size from a pea to a hazel-nut. In other parts of the uterus smooth spaces were discernible. In one case the irregularity of surface appeared to be general. The space occupied by these growths was about half of the uterus, and was generally on the posterior surface." Bladder complications were absent in five of the seven cases.

He refers to the treatment as follows:

"The treatment pursued in all the cases consisted in carefully removing the growths with a Sims' curette. The quantity removed varied from a dessertspoonful to two-thirds of a teacupful. The growths always exhibited the same grayish-white, vascular, brain-like appearance, and varied from the size of a pea to one

somewhat larger than a horse-bean." Removal by the curette was repeated several times in some of the cases.

Referring to the diagnosis of these growths, he continues (p. 48):

"If we compare these growths with those removed in the case of endometritis, the latter are seen to be intensely hyperemic, and under the microscope they show an increase of all the elements of the uterine mucous membrane—dilated follicles, with abundant cell infiltration of the connective tissue—while in diffuse sarcoma the growths are of a grayish-white color, very vascular, and presenting a soft, brain-like consistence, and are capable of being easily crushed between the fingers."

All of Mr. Clay's patients were adults, and six of them had borne children. I fail to find reference to similar cases occurring in the practice of any other physician. Emmet does not speak of such cases, and, as his work embodies nearly everything that is new in gynecology, I infer that the paper of Mr. Clay has escaped his observation.

*Third.*—The absence of vesical symptoms, notwithstanding the invasion of the base of the bladder by the growth, as described by Dr. Lamb, is worthy of note. Still in Mr. Clay's cases the bladder was affected only twice.

*Fourth.*—The failure to discover an abdominal tumor in my little patient calls for more than a passing note. As stated above, the tumor was not discovered until the morning of the day on which the operation for removal of the growth protruding from the vagina was to be performed, and was then discovered by the mother. The only explanation I can give is that the growth was mainly below the symphysis pubis, and retracted into the hollow of the sacrum, and so remained until it had attained such a magnitude as to enforce its ascent into the abdominal cavity. In an adult this would in all probability have been discovered early, as vaginal examination would have been instituted early after the first appearance of a growth at the vulvar orifice, but the patient being a child, this course was not followed.

*Fifth.*—The rapid advance of the abdominal tumor after the removal of the intra-uterine polypi. This, however, is many times observed after partial removal of *malignant* growths.

*Sixth.*—The facility with which the vaginal examination

was made is worthy of note. It rarely happens that a physician is called upon to pass his finger into the vagina of a girl of such tender years, and many of our oldest practitioners have assured me that they have never done so. In this case, the growth of the polypi and consequent dilatation of the vagina and its orifice made the examination exceptionally easy. Of course, I do not mean to recommend the frequent examination of children by this method, but only mention the circumstance to show that in suitable cases physicians may resort to such procedures without fear of doing injury to the little patients whose afflictions may seem to demand them.

A few words and quotations in relation to sarcoma of the uterus will close what I have to say in this paper.

As to the frequency of the disease and the social condition of the patients, Dr. Emmet, in the last edition of his "*Gynecology*" (p. 509), says: "It is of rare occurrence, and is frequently mistaken for epithelioma. I have seen but seven cases, all, with one exception, occurring in women who had never borne children, and in five the disease developed in connection with supposed fibroid growths. All of these women had been under my care, and I had detected the existence of the fibrous growths long previous to the appearance of the sarcoma." By a singular coincidence, Mr. Clay had seven cases, and the social condition of the patients was exactly reversed; thus six of the patients had borne children (from three to eight), while only one was a virgin. Emmet refers to this point again (p. 85), where he says: "This disease is rarely found in the female who has borne children; at least I have never met with it except in the unmarried and sterile." He had only one out of seven who had borne a child.

Dr. Emmet, speaking of the time of life most favorable to the growth of sarcomatous tumors, says (p. 85): "Sarcoma may occur at any time during the active sexual life of a female." I have found no reference anywhere to the growth of such a tumor in a child.

The same author says of sarcoma (p. 495): "It originates in the connective tissue of the uterus; it has its seat generally near the fundus, and is seldom, if ever, found below the internal os." In this statement Dr. Emmet is substantially in accord with other authorities.



The absence of pain in my patient may be referred to, inasmuch as some have claimed this symptom to be characteristic of sarcoma in the earlier stages of the disease. Dr. D. H. Hayden (*Bost. Med. and Surg. Jour.*, 1874, Vol. xc., p. 593), after giving the history of a case of sarcoma of the uterus, gives the following as one of the clinical differences between that disease and carcinoma:

"In *sarcoma* there is very great pain from the outset. This does not generally occur in carcinoma until the neighboring organs are involved." This dictum will have to be modified.

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## ABSTRACT.

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1. **Henoch: The Pathology of Measles** (*Berl. Klin. Wochenschr.*, 13, 1882).—In a four-year-old girl the eruption of measles began normally, but with its completion the fever did not sink and on the third day after the beginning of the eruption the whole surface of the body was covered with numerous vesicles of the size of a hazel-nut to that of a dollar, while the measles eruption between became hemorrhagic. The whole face was edematous, the eyelids so swollen that they could not be opened. After the vesicular eruption had ceased, the morning temperature sank on the fifth day to  $37.8^{\circ}$ , but rose at evening to  $38.5^{\circ}$ . The eruption now resembled a universal erysipelas bullosum or still more an unusually developed pemphigus acutus. With the exception of symptoms of beginning collapse and very small pulse, the general condition of the child offered nothing striking. Between the sixth and seventh days croupous pneumonia developed which caused death in eight days. Similar observations in the course of measles are reported by Klüpfel, Steiner, and Löschner. Henoch believes that we are not justified in considering this exanthema, as Steiner did, as the result of an extremely acute dermatitis morbillosa, because the vesicles developed not only upon the morbilli eruption, but upon the wholly unchanged skin. It was rather a complication of measles with acute pemphigus.

J. F.

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ORIGINAL COMMUNICATIONS.

AN ANALYSIS OF THIRTY-ONE OPERATIONS FOR REPAIR  
OF LACERATION OF THE CERVIX UTERI.

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It is singular, in view of what may be confidently asserted of this operation as a relief for a specific injury, that any doubt should be expressed as to its expediency, or as to the class of cases in which it should be employed. Such is the fact, however. It was an Englishman, I believe, who said at the time of the late Medical Congress that in America gynecologists were divided into two classes, one of whom was employed in dividing the cervix, and the other in sewing it up. That it can be made a serious thing, that its relations to uterine disease as a potent means of relief or cure need to be carefully studied, is something that has not yet penetrated the average mind of the European gynecologist. And this among those who lead in practice and make opinion. For instance, Courty<sup>1</sup> makes no mention of the operation; Eustache<sup>2</sup> gives it a paragraph of dozen lines or so; Hegar

<sup>1</sup> Courty : A Prac. Treat. on Dis. of the Uterus, Ovaries and Fallopian Tubes. Eng. Trans., Phila., 1883.

<sup>2</sup> Eustache : Manuel Pratique des Mal. des Femmes, p. 218, Paris, 1881.

and Kalténbach<sup>1</sup> give it two pages, with very brief technical treatment, without illustrations. Hart and Barbour,<sup>2</sup> more than other English authors, will have the credit of bringing it clearly before English gynecologists. They give it a very excellent chapter, with practical indications for the employment of hystero-trachelorrhaphy. Edis<sup>3</sup> devotes one of the poorest sections of his book to this operation, and surrounds it with such absurd precautions that neither surgeons nor patients will resort to it without dread.

The reason for this state of affairs abroad, I think, lies in the fact that the operation has been over-praised by Americans. The method has been taken up with too much enthusiasm, employed too indiscriminately, and with more positiveness as a means of cure than results have authorized. The conservative spirit of European gynecologists has recoiled. No enthusiasm has been aroused. Those who have tried it with the expectation that displacements and cervical catarrh were infallibly cured by it have been disappointed. So complete is the failure of the operation to cure catarrh of the cervix, that Schroeder<sup>4</sup> has conceived and practised a new operation to meet the deficiency in respect to this symptom. Schroeder's method, I feel safe in saying, will prove far more difficult in practice than Emmet's, and equally disappointing as an agent to relieve the symptom against which it is mainly directed. Schroeder, and those with him who claim that cervical catarrh is the condition principally calling for relief, as well as the chief cause for the non-reunion of the cervical rent, are, I am quite sure, mistaken. Schroeder says: "I certainly hold it to be incorrect to neglect the catarrh and to cure the laceration at once by Emmet's operation." This, to my mind, proves that he has not faithfully tried it, except in the spirit of which I have spoken—with too great expectation as to the results to be gained, and thus with final disappointment.

I shall say nothing further here as to the results that may legitimately be expected from the operation, and briefly state my views as to the local conditions which indicate it. I shall

<sup>1</sup> Hegar u. Kalténbach: *Die Operative Gynæk.*, p. 538, Stuttg., 1881.

<sup>2</sup> Hart and Barbour: *Manual of Gynecology*, p. 262, Edinburgh, 1881.

<sup>3</sup> Edis: *Dis. of Women*, p. 202, Phila., 1882.

<sup>4</sup> AM. JOUR. OBSTET., "Cervical Lacerations and Emmet's Operation," Vol. xv., p. 538.



start with a proposition to which all gynecologists can give their assent. The operation is designed to relieve a specific injury and those general and local symptoms that result from it. Cervical catarrh and retroversion are pathognomonic of no pelvic disease in particular; the first may attend any form of cervical hyperemia, and the latter any form of uterine hyperplasia. In connection with laceration of the cervix they must be regarded as concomitant conditions rather than as symptoms, and if they disappear on the repair of the cervical rent, it is as a secondary, not a primary result. That this is a secondary, and very doubtful result, a careful study of my tables will prove. Notwithstanding the fact that these two conditions are uniform attendants of the local morbid status, I shall ignore them as symptoms.

A narrow line separates the symptoms of laceration of the cervix from those that attend uterine functional diseases, or organic lesions, with uniformity. These symptoms are both general and local. The general symptoms are such as arise from a constant local pain—a pain that rest or exercise, as the patient may, never ceases. Hence we have impaired nutrition, increased nervous irritability, and decreased endurance. We have the same general expressions of uterine disturbance in about every other form of disease of this organ, but we find them in cases of laceration existing under conditions, of intensity and rapidity of development, that are only equalled by malignant disease.

Bad lacerations of the cervix are apt to proclaim themselves in their full intensity after the completion of lactation, and the re-establishment of menstruation. During the period of uterine rest, the symptoms of local injury are obscure, as a rule. Very often this history of the case shows that the more active local disturbances date from weaning the child, rather than from the labor, and which serves to fix the period of the rapid decline in the general health.

In the subjective local conditions we find nothing pointing directly to a local lesion except the sharp pain felt low in the pelvis on sitting down, or making abrupt movements. We find sacralgia, double or right or left ovaralgia, associated with marked uniformity with every case, but the same may be said with like force of uterine flexions, or cervical erosions.

When we enter the region of disturbed nerve-centres we find too great a variety of reflex subjective conditions, and can give but two as appearing often enough to deserve attention. In the head we have the cephalalgia and occipital pain quite often complained of, and in the abdominal region, I have observed a sharp pain, beginning in the ovary, rapidly involving the whole pelvic region, and culminating in great intensity. In its last stage it resembles a so-called uterine colic.

In the same indirect way I associate sterility with laceration of the cervix. In table II. this is shown, I think, beyond a doubt, and in its numerical relations needs no further comment. Its cause, I suspect, lies in the partial destruction of the cavity of the cervix as a proper receptacle for the seminal fluid. To my mind it seems idle to either look for or discuss positive or probable symptoms of a lacerated cervix, for the simple reason that the best proof of the lesion is in finding the laceration itself. For this purpose I employ nothing but the touch, using the speculum only for the purpose of examining more carefully the condition of the cervix.

Now a laceration being found, it must be in such a condition as to be a probable source of the local and reflex symptoms. This is not always the case. I do not, and I hope gynecologists generally do not, operate in every case of laceration that they see. The cervix being hyperemic, hyperesthetic, and the bottom of the rent painful on the slightest pressure of the finger, constitutes, in my view, a local condition that will explain a great variety of subjective symptoms and demand the repair of the cervical rent. This condition of the injured cervix may not be constant, but if it be menstrual, or periodic, it calls just as imperiously for repair. In cases of minor lacerations, in which the rents are well and normally cicatrized, free from tenderness upon touch, or from postural changes, and maintain this negative relation toward cervical catarrh, uterine dislocations, and pelvic pain, continually, and without menstrual exacerbations, I should seek elsewhere than the laceration for a cause of the disturbance. Whenever I have closed these minor lacerations tentatively, in the hope of relieving some obscure pelvic trouble, it has resulted in failure, as I have also seen it in the hands of others.

From my cases of operation for repair of laceration of the

cervix I have selected the following instances, my plan of selection being based upon one consideration, namely, a known history since the operation, and a sufficient length of time afterward to give a fair estimate of results.

*I.—Relations of Sterility to Laceration of the Cervix Uteri.*

	No.	Average age at marriage.	Average duration of laceration.	Average age at time of operation.	Average No. of births since laceration.
No. of cases with one child.....	17	20.6	4.8	28+	0.
No. of cases with two children.....	7	20.4	9.8	37	0.7+
No. of cases with three children.....	4	18.5	6.	32	1.
No. of cases with four children.....	1	18.	19.	43	0.
No. of cases with six children.....	1	19.	5.	43	2.

This table shows that for an aggregate average of 44.6 years of duration of laceration of the cervix, 30 women, of the total average of 36 years at the time of operation, had an aggregate average of 3.7 children.

In Table II. I would call attention to the number of abortions previous to the laceration as corroborating what Dr. Emmet has stated about the etiological relations between abortion and laceration; and also, the direct causation of the injury by abortion, to which I drew attention in my paper upon the "Etiology of Lacerations of the Cervix Uteri."<sup>1</sup> Abortions occurred in one-third of the cases. In over two-thirds of the cases the first labor was the one at fault.

To the surgeon the better part of every operation is the result. In the following table an idea is given of the extent of the local injury and the conditions observed at varying periods after the repair. The number of sutures used in each operation gives a fair estimate of the extent of the cervical rent, as they were introduced in the proportion of about five to the inch. Only those cases are tabulated in which a definite idea could be formed of the after-conditions. Every gynecologist knows how easily cases are lost track of; and a large number

<sup>1</sup> This JOURNAL, vol. xv., p. 103.



of my cases I have never heard anything from since they left me. There has been no effort to select cases. Conditions have been recorded accurately at the time of observation and the results faithfully given.

Table II.—Table of Antecedents.

No.	Age.	Age at Menstruation.	Age at marriage.	No. of Children.	No. of birth causing laceration.	Character of Labor.	No. of Abortions, previous to laceration.	Duration of Laceration, years.	Remarks.
1	35	13	13	1	1	normal	1	6	Communitic marriage, 20 years, legal marriage? 1 labor, 1 abortion since.
2	30	14	20	3	2	normal		5	
3	46	16	20	2	1	normal		25	
4	32	15	22	1	1	normal		8	
5	43	15	19	6	4	instrumental	2	5	Abortion 2 y'rs. before lac.
6	23	13	21	1	1	normal		6 mos.	
7	32	16	21	1	1	instrumental		8	Sterile since.
8	24	13	20	1	1	instrumental		3	
9	24	12	18	1	1	normal		5	
10	39	14	20	2	2	normal		6	
11	25	12	19				2	1	The last abortion at 5 mos., caused the laceration.
12	28	13	20	1	1	normal		7	
13	26	16	19	1	1	normal		5	
14	37	14	19	2	1	tedious		10	
15	34	15	20	2	1	normal		9	
16	27	15	21	1	1	normal		6	
17	26	12	14	3	3	normal		5	
18	30		22	3	1	normal		6	
19	36	15	29	2	1	normal	2	6	
20	35	13	22	2	2	normal		5	Communitic marriage.
21	32	12	20	2	1	normal		8	
22	32	13	24	1	1	normal	1		
23	26	12		1	1	normal		3	
24	27	14	20	1	1	normal		2	
25	30	13	20	1	1	instrumental		7	
26	32	14	18	1	1	normal	1	13	
27	25	15	23	1	1	normal	1	2	
28	29	15	27				1		Abortion at 5 mos., caused laceration.
29	42	15	18	3	2	normal	2	8	
30	30	15	27	1	1	normal		1	Second operation, case 28.
31	43	13	18	4	4	normal	3	19	

Table III.—Objective and Subjective Conditions.

NO.	POSITION OF UTERUS.	SIZE OF UTERUS.	CONDITION OF UTERUS.	MENSTRUATION.		CERVICAL CATARRH.	CONDITION OF CERVIX.	NERVOUS SYSTEM.		NUTRITION.	ENDURANCE.	SEXUAL RELATION.	REMARKS.
				OBJECTIVE CONDITION.	SUBJECTIVE CONDITION.			PAIN.	HYSTERIA, etc.				
1	Prolapsed....	inch. 2½	Corporeal tenderness monthly.	28 days, 6 to 7 days, profuse.	Painful....	Profuse, constant.	Hypertroph., erosion, eversion, double lac., tenderness.	Sacralgia, ovarian, algia on r. side.	Attacks rare.	Slightly impaired.	Impaired.	Normal	.....
2	Retroverted..	2½	.....	28 days, 4 to 5 mos. normal.	4 Sacralgia....	Profuse....	Laceration l. side.	Vertex and down spine sacralgia.	.....	Impaired.	Impaired.	Normal	.....
3	Prolapsed....	3½	Hypertrophic sensitive.	3 to 5 mos. lasting 14 d. hemorrhagic	Expulsive pain at times.	Profuse, constant.	Hypertroph., granular, bleeding at touch, double lac.	Sacralgia, r. and l. ovarian, down limbs.	.....	Impaired.	Impaired.	Painful	Tissue of cervix very friable.
4	Slight retroversion, prolapsed.	3½	Indurated, hypertrophic nodular masses p. wall.	Hemorrhagic 14 to 21 d. lasting 7-14 d.	.....	Not profuse, constant, aluminous	Hypertroph., indurated, double lac.	Sacralgia, r. and l. ovarian.	Frequent.	Good.	Impaired by menorrhagia.	Painful	.....
5	Prolapsed....	3	Soft hypertrophy.	21 d. lasting 7 d. hemorrhagic.	Sacralgia, expulsive pain.	Profuse, constant.	Hypertroph., granular, bleeding, double lac.	Sacralgia, pain in limbs.	.....	Fair.	.....	.....	.....
6	Retroverted..	2½	P wall very sensitive.	Absent....	.....	Slight....	Very sensitive, double lac.	Sacralgia, cephalalgia, r. ovarian.	.....	Impaired.	Impaired.	Painful	Nursing.
7	Retroverted..	2½	Sensitive.	28 d. lasting 6 d. profuse.	Sacralgia, cephalalgia, vomiting.	Profuse, constant.	Elongated, double lac.	Sacralgia, l. ovarian, down limbs.	.....	.....	Impaired.	.....	.....
8	Normal.....	2½	Sensitive in all genitalia.	3 to 6 mos. lasting 2 or 3 d.	.....	Not profuse, constant.	Double lac....	R. ovarian, down limb	.....	Impaired and anemic.	Impaired.	Painful	Tender over r. ovary.

*Table III.—Objective and Subjective Conditions.*

NO.	POSITION OF UTERUS.	SIZE OF UTERUS.	CONDITION OF UTERUS.	MENSTRUATION.		CERVICAL CATARRH.	CONDITION OF CERVIX.	NERVOUS SYSTEM.		NUTRITION.	EMBARRASSED LOCOMOTION.	SEXUAL RELATION.	REMARKS.
				OBJECTIVE CONDITION.	SUBJECTIVE CONDITION.			PAIN.	HYSTERIA, etc.				
9	Retroverted 2°, low in pelvis.	3 in.	Soft, hypertrophied.	21 d. last. bearing 4 to 5 d. dark, offensive.	Sacralgia, down, exhaustion.	Profuse, constant.	Elongated, double lac.	Severe pelvic pain, beginning in right side, periodic, not menstrial.					
10	Reversion	2½		28 d. lasting 5 d. profuse.	Not profuse, constant.	Not profuse, constant.	Size about normal, double lac. erosion, everted.	Periosteal hemi-crania, sacralgia, r. and l. ovari- algia.	Irritable		Painful		
11	Reversion 3°.	2½	Sensitive.	28 d. lasting 3 d.		Slight, constant.	Very short, slight erosion, double lac.	Sacralgia intense.	Nervous	Fat an- emic, blond.	Fair		Posterior flap of cervix retracted, cul-de-sac so shallow that it could not hold pessary.
12	Retroverted.	2½	Posterior wall sensitive.	21 d. lasting 4 to 5 d. profuse.	Severe 1st d. sacralgia.	Profuse, constant.	Sensitive, double lac.	Sacralgia l. ovar- algia.			Endur- ance im- paired.		
13	Retroverted.	2½		28 d. last. 5 d. ant.	Headache severe.	Profuse, constant.	Elongated, super- ficial lac. on r. side, erosion.	Severe constant l. ovar- algia.		Slightly im- paired.	Painful		
14	Retroverted.	3	Indurated hypertrophied.	28 to 35 d. scanty	Dysmenor- rhea throughout	Profuse, constant.	Indurated, hypertrophied, double lac.	Cephalalgia, along spine.	p. Irritable		L. o. o- median difficult		Frequent dys- uria.
15	Prolapsed...	3	Indurated sensitive.	21 d. last. 5 d. profuse, clots.	Dysmen- or-4 d. before dis- charge ap- pears.	Profuse, constant.	Pale, indurated, hypertrophied, double lac.	Sacralgia, r. and l. ovar- algia.	Hysterical, at thin an- tervals.	Pale an- emic, im- paired.	Endur- ance im- paired.		



16	Very low in pelvis, retroverted.	2%	.....	23 d. last, 3 d. scanty, pale.	Severe throughout	Slight, constant, white, flocculent.	Congested, double lac., superficial on r. side.	Sacralgia, right ovaralgia.	Low spirits, hysterical.	Impaired.	Endurance, locomotion, impaired.	Painful
17	Retroverted..	2%	Sensitive.	28 d. lasts to 4 d. scanty, offensive.	Pain, beginning 4 d. before and lasting throughout	Profuse, constant, albuminous.	Slightly elongated, red, irritable, lac. l. side.	R. and l. ovaralgia, severe sacralgia.	Low spirits, hysterical.	Greatly impaired.	Confinement to room.	Painful
18	Prolapsed....	3%	Soft hypertrophy.	.....	No pain....	Profuse, constant, albuminous.	Soft, hypertrophied, erosion, bleeds easily, double lac.	Sacralgia.....	.....	Impaired.	Locomotion, impaired.	Painful
19	Retroverted..	3	Hypertrophic, sensitive.	28 d. lasts to 5 d. dark, profuse.	Severe uterine pain, 1st day, confined to bed.	Profuse, constant.	Hypertrophied, soft, erosion, double lac.	Cephalalgia, sacralgia, l. chest pain.	.....	Impaired.	.....	.....
20	Prolapsed....	2%	.....	21 d. lasts to 5 d. profuse, sm. clots.	Uterine expulsive pain.	Profuse, constant.	Soft, elongated, granular, double lac.	Periodic l. ovaralgia, sacralgia.	Hysterical, low spirits.	Impaired, about a year.	Walking, sitting, painful.	Painful, bleeding.
21	Retroverted..	3	Hypertrophic, sensitive.	21 d. lasts to 4 d. profuse.	Dysmenorrhea.	Profuse, constant.	Hypertrophied, erosion, double lac.	Sacralgia.....	.....	Impaired, severe indigestion.	Walking, sitting, painful.	.....
22	Retroverted, very low in pelvis.	3	Hypertrophic, sensitive.	28 d. lasts to 5 d. profuse	.....	Scanty, constant.	Hypertrophied, erosion, double lac.	Sacralgia.....	.....	.....	.....	.....
23	Retroverted 3°.	3	Hypertrophic, sensitive.	21 d. lasts to 6 d. profuse, clots.	Exaggeration of all pain.	Profuse, constant.	Soft, hypertrophied, double lac.	R. and l. ovaralgia, sacralgia, painful bearing down.	.....	Impaired.	Bearing down, so severe that has kept her bed 3 mos.	Painful

Table III.—Objective and Subjective Conditions.

No.	POSITION OF UTERUS.	SIZE OF UTERUS.	CONDITION OF UTERUS.	MENSTRUATION.		CERVICAL CATARRH.	CONDITION OF CERVIX.	NERVOUS SYSTEM.		NUTRITION.	ENDURANCE.	SEXUAL RELATION.	REMARKS.
				OBJECTIVE CONDITION.	SUBJECTIVE CONDITION.			PAIN.	HYSTERIA, etc.				
24	Retroverted.	inch. 2½	Hypertrophic, sensitive.	38 d., lasts 5 d., amount normal.	Painful 1st two days.	Profuse, constant.	Erosion, eversion, double lac.	Sacralgia.		Large corporulent.	Takes very little exercise.		
25	Extreme anteversion.	2½	Sensitive.	38 d., lasts 3 to 10 d., profuse, often clots.	Severe ex-pulsive p. throughout	Scanty, constant.	Hypertrophic, erosion, double lac.	Sacralgia, cephalalgia.	Hysterical.	Greatly impaired.	Endurance impaired.	Painful very rare	Takes morphine, dysmenorrhea frequent.
26	Retroverted.	3½	Hypertrophic, very sensitive.	38 d., lasts 5 d., normal amount	Sacralgia, ovaralgia.	Profuse, constant.	Hypertrophic, indurated, erosion, double lac.	Sacralgia, pain on walking and sitting.			Good.		
27	Retroverted.	Measure lost.	Hypertrophic.	14 d., lasts 5 d., profuse	Ovaralgia.	Profuse, constant.	Congested, eversion, erosion, double lac.	Sacralgia, r. and l. ovaralgia uterine.	Hysterical.	Impaired.	Endurance impaired.	Painful	
28	Retroverted.	2½	Sensitive.	21 d., lasts 4 d., amount normal	Sacralgia, ovaralgia.	Profuse, constant.	Hypertrophic, erosion, lac. l. side.	Sacralgia, l. ovaralgia, pain at coccyx.		Stout.	Endurance impaired.		
29	Retroverted.	2½		38 d., lasts 4 to 5 d., profuse.	Sacralgia, ovaralgia.	Profuse, constant.	Hypertrophic, erosion, double lac.	Vertex pain, sacralgia, bearing down.		Impaired.		Painful impair desire.	
30	Retroverted.	3	Sensitive.	21 to 28 d., lasts 4 d., profuse.	Ovaralgia	Profuse, constant.	Hypertrophic, erosion, double lac.	Sacralgia, pain at coccyx.		Stout.	Endurance impaired.		
31	Prolapsed.	2½	Sensitive.	38 d., lasts 3 d., scant, offensive.	Severe sacralgia.	Profuse, constant.	Indurated, hypertrophic, double lac.	Sacralgia.		Impaired.	Endurance impaired.		Widow.

*Table IV.—Results.*

NO.	OPERATION.	RESULTS.
1	Two sutures each side, removed on 8th day; in removing sutures on r. side, flaps parted; replaced sutures on r. side; union perfect.	About eight months after, came for further treatment; catarrh troublesome; retroversion same. R Pot. iod., pot. brom., āā grs. iij.; tr. columbo, ʒi., t.d.; Churchill's tr. to cervix; Hodge-Smith pessary. Two months later Mrs. B. reports better health, general and local, than she has had for years.
2	Three sutures l. side, removed 9th day; union perfect.	One month after, the peculiar vertex pain and down spine relieved; face bright and animated; gaining in flesh; retroversion unchanged, and gives every sign of pregnancy; 2 months after this lady missed; 6 months after, she aborted spontaneously past second month; has had no further treatment; retroversion unchanged; no return of reflex neuralgias.
3	Three sutures, each side, removed 10th day; union perfect.	About 4 months after, but little improvement; uterus very low, retroverted; catarrh profuse; has not menstruated since; gained in flesh; treatment as in Case 1; not returned since.
4	Three sutures on each side, removed 10th day. union perfect.	Three months after, menstruation regular, quantity normal; has gone into society for the first time in several years; displacement unchanged.
5	Three sutures each side, removed on 10th day; union perfect.	About 4 months after, nutrition greatly improved; menstruation normal in amount; no uterine catarrh; says she is well.
6	Two sutures on each side, removed 9th day; union perfect.	About 3 months after, has made quite an improvement in local pain and tenderness; general health very poor; advised weaning child; no report since; retroversion unchanged. Nine months after, Mrs. K. is suffering from the entire group of reflex, symptoms unchanged; information by letter, not examination.
7	Two sutures on r., 3 on l. side, removed 8th day; union perfect.	About 6 months after, ovarian and other pain during the periods since operation nearly removed; catarrh and uterine position unchanged; patient not since heard from.
8	Two sutures, each side, removed 9th day; union perfect.	About 3 months after, had great pain and tenderness r. side and leg after operation; treated by galvanic current; is now rapidly improving in flesh and spirits; has some pain in r. side; catarrh unchanged, but is very nearly well.
9	Three sutures on each side, removed on 8th day; union perfect; in removing last sutures r. side line of union gave way slightly; left so.	Two months after; catarrh persists; uterus higher in pelvis, still retroverted; has had no pain. Five months after, says she is well; has had none of her old pain; uterus still retroverted; introduced a Smith-Hodge pessary; not seen since.



2	OPERATION.	RESULTS.
10	Two sutures on each side, removed 9th day; union perfect.	One month after, writes that she has not yet observed any improvement. Eighteen months after: retroversion still exists: same uterine catarrh; cephalalgia and ovaralgia disappeared; same sacralgia; gave no treatment.
11	Two sutures each side, removed 7th day; union perfect.	The sacralgia persisted for several months. Six months after, was free from pain; general health improved; retroversion still present.
12	Two sutures each side, removed 8th day; union perfect.	Five months after, very much improved in general health; displacement noticeable: still has some pain in side, especially after exercise.
13	One suture on r., 2 on l. side, removed 9th day; union perfect.	Three months after, free from pain; uterus higher in pelvic cavity, but still retroverted; catarrh much less; Hodge-Smith pessary; no report since.
14	Three sutures on each side, removed 9th day; union perfect.	Seven months after, uterus much reduced in size, and in nearly normal position; menstruation regular and nearly painless; calls herself well. One and a half years after, writes me that she is 6 months pregnant.
15	Three sutures on each side, removed 9th day; union perfect.	Three months after, reports herself in perfect health; the change in her nutrition is remarkable; slight catarrh; uterine position unchanged.
16	One suture on r., 2 on l. side, removed 9th day; union perfect.	Two months after, has gained in flesh and spirits, no attack of hysteria; uterus still retroverted; introduced Hodge-Smith pessary; no further report.
17	Two sutures on l. side, removed 7th day; union perfect.	This operation was tentative, as the slight laceration, as well as all the parts, were constantly tender; it was hoped that its repair would remove a possible source of general pelvic pain and arrested nutrition. Two years after, is still an invalid.
18	Two sutures on r., 3 on l. side, removed 10th day; union perfect.	Three months after, position of uterus normal: the hemorrhoids have disappeared; a slight catarrh persists; says health is perfect; about a year after I delivered Mrs. W. of a nine-pound boy, after a short and very energetic labor; a month later I examined and found laceration nearly complete on l. side; advised its repair.
19	Two sutures on r., 3 on l. side, removed 8th day; union appeared perfect; a month later examination showed that line of union on l. side had parted in form of membranous band; replaced 2 sutures; removed on 8th d.; union perfect.	One month after, patient reported feeling worse than before operation; the membranous band was very sensitive, and seemed to be drawn upon by every movement of body. Four months after, reports herself nearly free from all pain; uterus retroverted; nutrition greatly improved; has occasionally worn a Hodge-Smith pessary, as displacement is unchanged.
20	Three sutures on l., 2 on r. side, removed 10th d.; union perfect.	About one year after, called to see me; reported herself well; no examination; a successful pregnancy removed 10th d.; and labor followed; no laceration.

NO.	OPERATION.	RESULTS.
21	Three sutures on each side; union perfect.	One year after, general health greatly improved; uterus not apparently reduced in size, but not sensitive; catarrh less profuse; retroversion present; some sacralgia; pregnant 1½ years after.
22	Three sutures each side, removed 9th day; union perfect.	Eighteen months after, mentally and physically the improvement has been equal to perfect health; locally the uterus lies very low, and is occasionally supported by a Meigs ring; she has gained nearly 20 pounds in flesh; has had one pregnancy, with abortion at fourth month.
23	Three sutures each side; union perfect.	Three months after, Dr. Skinner, of Dewitt, N. Y., reports her in perfect health.
24	Two sutures on each side, removed 8th day; union perfect.	Nearly two years after, this patient in general health is improved; have twice since, at intervals of 6 and 8 months, treated her for extensive erosion of cervix; from the retroverted condition before the repair, the organ has strongly anteverted, a condition for which I had treated her some years before.
25	Two sutures on r., 1 on l. side, removed on 12th d.; union perfect.	All complaint seemed removed by the operation; one year about, Dr. Wm. Manlius Smith, of Manlius, delivered her at term without laceration.
26	Union perfect.	One year after, there has been a steady improvement in local condition and general health; four years after, she was delivered of a child, the first escape from abortion since laceration; present condition not known.
27	Two sutures, each side; union perfect.	Two years after, she reports her health nearly perfect; menstruation normal in time and amount; endurance good.
28	Two sutures on each side, removed 9th day; union perfect.	Six months after, uterus normal in position and sensibility; calls herself cured.
29	Two sutures each side, removed 8th day; union perfect.	Two years after, subjective symptoms removed; uterine position nearly normal; cervix disposed to granular erosion (papillary hypertrophy), for which she has occasionally been treated.
30	Two sutures l. side, removed 8th day; union perfect.	Case 28; Dr. S. F. Dela Mater, of Fayetteville, N. Y., delivered her, after easy labor, of child at term, with the result as stated; the effect of the second repair was equally prompt in relieving symptoms as the first; a painful coccyx has given some trouble, as well as a fixed habit to "doctor."
31	Two sutures on r., 3 on l. side, removed 9th day; union perfect.	Six months after, except in relief to some local tenderness and pain from postural changes, no marked improvement is to be observed in this case; the objective and subjective conditions, as detailed in Table III., unchanged.

The following synopsis will bring the details contained in the foregoing table concisely before the reader:

Uterine displacement unchanged in 16 cases. Uterine displacement improved in 11 cases. Uterine catarrh unimproved in 10 cases, and improved in 11 cases. Subjective symptoms

unimproved in 3 cases, and improved, or entirely relieved, in 16 cases. Nutrition improved in 18 cases, and remaining unchanged in 5 cases. Other treatment was found necessary in 12 cases.

The reader will observe the nearly constant uniformity with which retroversion was the displacement observed. I explain this by the fact that this form of uterine displacement is the usual attendant of the sub-involuted uterus, as well as of the interstitial hypertrophy. An important gain by closure of the cervical rent is the ease with which mechanical support can be adjusted to correct the displacement. Previous to this, pessaries are badly borne, and do harm rather than good, for the reason that the traction exerted on the posterior cervical flap draws the rent apart, and increases the intensity of the local focus of irritation. The sound measurements given do not always show a high degree of uterine enlargement; but the sound does not always give a clear idea of this condition. The hypertrophy is quite often irregular, the posterior wall being enlarged in excess of the anterior, showing in some instances nodular masses, which were mistaken for small fibroids in one case by a very excellent physician. The depth of the uterine cavity would in these cases reveal nothing of this irregular form of hypertrophy. Sub-involution and interstitial hyperplastic enlargement are simply placed in a condition available for treatment by cervical repair. We have removed the source of the nutritive hyperemia, and nature, fortified by local and general measures, can in time effect the cure. I should not, therefore, expect cervical repair unaided to accomplish the cure of this condition. Cervical catarrh holds the same relation to this operation. Some authors say that the catarrh should be removed first, and the rent closed afterward. I hold this to be impossible. Before Dr. Emmet devised this operation, was not every doctor in the land trying to do this very thing? And who ever heard of a case being cured? First close the laceration, and then, if the catarrh continues troublesome, as it is very likely to be, we have the part in a condition favorable for treatment. This operation will not then, according to my experience, cure cervical catarrh.

It may be asked, What, as a direct result, will this operation effect? Simply closure of the laceration, nothing more.



If one expects the cervical catarrh to cease, the uterine mal-position to correct itself as a direct outcome of the operation, one expects too much, and more than I have ever seen accomplished. In laceration of the cervix uteri, we have a specific lesion, even if it does not—as can be scarcely expected—produce specific symptoms, the removal of which produces certain definite results; namely, we have in an unhealed wound of the cervix uteri an injury to what, in its cumulative reflex reactions during the menstrual life of woman, is a vital organ, and by removing which we guard the system against a source of disturbance. It matters not in what direction this disturbance manifests itself. It may be a decline in nutrition and impaired innervation, which are just as essentially an outcome of the local lesion as though it were sacralgia or ovaralgia. In proof of this, Table IV. shows improvement in nutrition and powers of endurance on removal of the local lesion, the cervical catarrh and uterine displacement remaining unchanged. For this reason, therefore, I make the operation from a different stand-point than the majority of American gynecologists. I make it for the purpose of removing its active and potential general reactions. The correction of uterine mal-position and cure of cervical catarrh will be more tardy outcomes from the operation, if these result at all without other aid. The reason why this beneficent operation has not been taken up abroad to the same extent that it has been in this country is, that foreign operators, misled by the injudicious enthusiasm of American gynecologists, have expected too much from the operation, and have been consequently disappointed. They have looked for local rather than general results. This is evident, or such a man as Prof. Schroeder would never have expected the operation to cure cervical catarrh.

I make the operation to cure sterility. I am able to show that my results in this direction are excellent. I think this is due to the restoration of the canal of the cervix as a cavity of the uterus. If the reader wishes further information upon the importance of this cavity in this relation, I refer him to Lott.<sup>1</sup>

Dr. Murphy<sup>2</sup> writes a recent article upon the effect of trachelorrhaphy upon fertility and parturition. He goes to

<sup>1</sup> Zur Anatomie u. Phys. d. Cervix Uteri, Erlangen, 1872.

<sup>2</sup> AMERICAN JOURNAL OF OBSTETRICS, January, 1883, p. 28.

the library of the Surgeon-General's office, and there, to his astonishment, discovers only eleven cases of conception recorded and the condition of the parts after subsequent labor noted. For a Washington doctor, there is no doubt that the library of the Surgeon-General's office settles every medical question, and on this well-known bias we must forgive Dr. Murphy his break-neck conclusion, "that repair of lacerations of the cervix uteri is usually followed by sterility." That he should predicate such a startling conclusion upon the basis of eleven cases is not a pleasant thing to reflect upon in its scientific relations. Now, to my mind, the simple fact is, that the relations of this operation to sterility are entirely negative, and that is the reason it has not been observed, and only eleven cases recorded of conception following. I—and I think the majority of gynecologists also—make the operation with a view to relieve the sterility due to the laceration, and with far better results than usually attends the treatment of this condition from other causes. The best answer to be made to Dr. Murphy, is to call attention to Table V. For a mean average duration of 6.1 + years during laceration, we have a fertility of five births, and for a mean average of 1.3 + years after operation, we have seven successful pregnancies with two abortions. If we were to include abortions among the pregnancies occurring during the existence of laceration, we should have a much better showing in favor of the operation as a cure for sterility and abortion.

*Table V.—Relative Fertility Before and After Operation.*

No.	Duration of Laceration, Years.	No. of Children during Laceration.	Time since Operation, Years.	No. of Labors at term since Operation.	No. of Abortions since Operation.	Remarks.
2	5	1	$\frac{1}{2}$	..	1	Aborted at 2 months.
14	10	1	1	1	..	
18	6	2	1	1	..	
20	5	..	$1\frac{1}{2}$	1	..	
21	8	1	$1\frac{1}{2}$	1	..	
22	..	..	1	..	1	Aborted at 4 months.
25	7	..	1	1	..	
26	13	..	4	1	..	
30	1	..	1	1	..	

Contrast this state of affairs with that shown in Table II.

relating to the same thirty cases, and I think I make my assertion good. I am not able to add as marked testimony concerning the renewal of the laceration as I should wish. Of the four patients whom I examined after labor, two suffered renewal of the laceration, and two showed the parts intact. I cannot think that this has much to do with the operation. The forces that ruptured the cervix in the first instances may also be present with equal force at the first labor subsequent to the repair, and renew the injury. From what I have seen and heard of the operation, I should say that the cervix ruptured in about half the cases at the subsequent labors. At any rate, the marked benefit from the operation in suppressing reflex neuralgia and restoring checked nutrition is so great that the

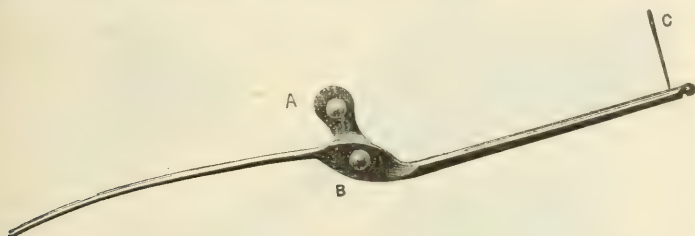


FIG. 1.



FIG. 2.

behavior of the cervix at subsequent labors has but little to do with the question of its expediency.

As my operation for the repair of the cervical rent is partly peculiar to myself, I think it proper to give a few words to the subject. The instrument that I use was figured and described in the *Medical Record* of New York, Jan. 22d, 1880. It was designed to popularize the operation, but, owing to a misunderstanding of the method of using it, such has not been the result. To correct this, I again figure the instrument and the manner of using it.

Fig. 1 represents what I term the male blade. A button projects at B to receive the slot of the female blade, shown at D, Fig. 2, after the style of an obstetric forceps. The arm pro-



jecting upward has a similar button at *A*, and which is used to receive the slot of the female blade in withdrawing the needle.

In preparing the parts, I observe but one rule. I first freshen the opposing surfaces that I wish to unite, and then carry my scissors over the outer surfaces of the flaps so as to remove a scant quarter of an inch of mucous membrane. Unless this is done, the line of union is apt to show a deep depression after repair, as in twisting the sutures the outer margin of the rent inverts, and unless this inverted edge is freshened, union cannot take place.

The parts being prepared, the male blade *D*, Fig. 3, is first

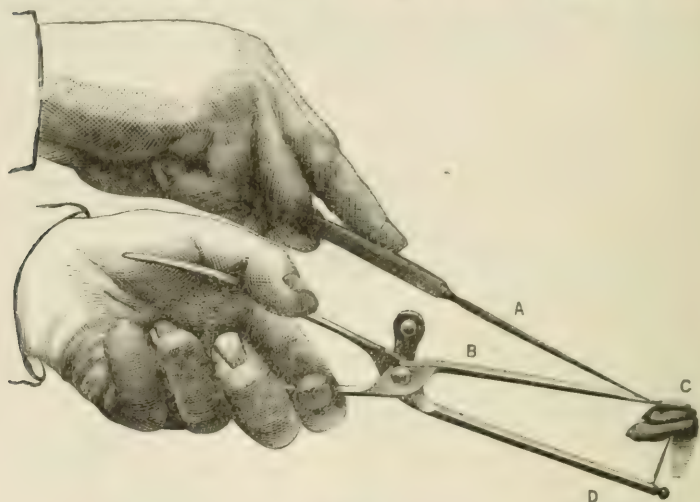


FIG. 3.

taken and the needle placed at that point on the posterior flap, letting its point slightly penetrate so as to hold it where it is desirable to make the first stitch. The slot of the female blade *D* is then adjusted, the tip of the blade resting lightly upon the the anterior flap. It will be observed here that the lower or posterior flap is elongated in advance of the anterior, and in order that the needle be made to pierce both flaps at opposite points, the anterior one must be drawn down by means of a tenaculum to correspond in length to the posterior flap. In the figure, the tenaculum *A* is seen grasped in the left hand and drawing down the flap *C*. While the flap is being elongated, it may be necessary to slide it laterally, one way or the other, so as

to secure lateral as well as longitudinal coaptation. When this adjustment is effected, the needle forceps is closed. No. 30 or 31 or 32 wire is then passed, looped, into the slot of the needle (C, Fig. 1), which is thus ready to be withdrawn. The female blade is removed and turned over, its extremity placed under the lower, or left hand, flap, and between it and the extremity of the male blade, as shown at A, Fig. 4. The slot in the female blade then drops on the button *a* of the extension upon the male blade (Fig. 1). If the reader will examine Fig. 4, he will observe that by closing the handles the extremities of the two blades are separated, which action must, of course, withdraw the needle.

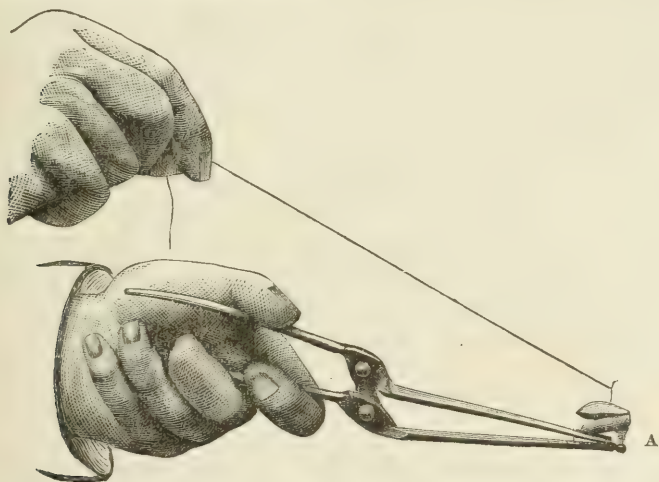


FIG. 4.

The needle need not be passed as deeply as some operators are in the practice of doing. If in paring the surface of the rent, a greater part of the tissue be removed from the outer margins, it follows that by bringing these margins in contact apposition is secured through the whole width of the denuded surfaces. It is, I think, a very simple manipulation. My assistants now are inclined to regard an operation a manipulative failure, no matter how many sutures are required, that exceeds twenty minutes in length. One great saving in time is in sponging. The only part of the operation during which I sponge is in paring. Here you need to see, especially in the final touches. But in passing the sutures once place the needle where you want

it, and if it does not transfix the opposite flap just where you want it, the error lies in the manner you have manipulated the flap by the tenaculum, and not in passing the needle. Hence no sponging in this stage is required, as in the other method with the needle and needle-holder. Some operators place considerable stress upon the direction in which the needle is passed to secure proper adjustment of the flaps. My way of doing this is in shaping the flap. No other way appears practical to me. No matter how you pass your needle, so far as it secures apposition of the freshened surfaces, the line of traction of the suture is determined by the direction in which its free ends are tied or twisted together.

Other operators put their patients through a more or less elaborate preparatory treatment, as though the repair of the cervical rent were the one end to be attained. I, on the contrary, operate at once, the operation being only preparatory and subsidiary to other treatment. I hold that it is impossible to cure a cervical catarrh, or adjust mechanical support to a uterine displacement until the cervix is repaired. The pain and misery which a woman undergoes who is subjected to the mal-treatment of a pessary with laceration of the cervix is untold, but would go a long way toward making up the sum of woman's sufferings.

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A CASE OF SUPPURATING CYST OF THE BROAD LIGAMENT.  
RUPTURE INTO THE BLADDER. LAPAROTOMY AND RE-  
MOVAL. DEATH.

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BY

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ON February 12th, 1883, my friend, Dr. John W. Snowden, of Waterford Works, N. J., sent me the following communication:

"I have a case of abdominal tumor, probably ovarian, which I would like to have you see with me. I first saw the patient three weeks ago, and found her in a state of extreme prostration, with a great deal of nausea, occasional vomiting, and complete ano-



rexia. There is a small, but painful, tumor in the left iliac region, with extreme tenderness throughout the lower part of the abdomen, together with great irritability of the bladder. I was anxious to have a consultation during the first week of my attendance, but the patient improved so promptly under the use of anodynes and quinine that her friends objected. The tumor also seemed to diminish considerably in size, and to spread or flatten out. The improvement was only temporary, however, and she is now running down again. The tumor has increased to the size it was when first seen by me."

Two days afterwards, I saw the patient in company with Dr. Snowden, and obtained this additional history:

M. S. is aged thirty-one years, has been married seven months, but has not been pregnant. Puberty occurred at fourteen years, after which the menses recurred regularly for about a year. During the second year of her menstrual life, there was an almost constant slight metrorrhagia. After this, the menses were absent for a time, and they have been irregular ever since.

At the age of eighteen, after severe exertion, she was seized with such violent pain in the pelvis that she was compelled to lie quietly in bed for several weeks. Her physician diagnosticated "prolapse of the womb." After recovering from this, she remained comparatively well during the next seven years. She then contracted a severe cold while skating, which resulted in suppression of menstruation a second time. After that the menses recurred in the summer months only, and gradually grew less frequent until the summer of 1881, when they did not appear, and have remained absent since.

In February, 1880, she began to suffer from "chills," accompanied with fever and night-sweats. She would recover from the attacks, but they have returned unexpectedly, and at irregular intervals since. In June, 1881, whilst in the act of carrying a tub to the cellar, she was seized suddenly with a violent pain in the left ovarian region. This became so severe that she was obliged to remain in bed several weeks. About this date, she noticed a "lump or swelling" in the left iliac region. This was sometimes full and prominent, and at others it would seem to have diminished in size, and to have lost its rounded form. At times, she would complain of feeling "bloated or filled with gas or wind," and as though something were being torn away from the spot occupied by the "lump."

In July, 1882, she was well enough, as she thought, to marry. This was, however, more for the purpose of consummating a long engagement than from a sense of propriety. After her marriage, her health seemed to improve for a time, but on November 27th, she was again attacked suddenly with pain in the same region as on the former occasions. This time it did not subside, but continued with increased violence. Soon after the occurrence of the first chills in 1880, she began to lose flesh, but the loss had been very gradual and slow until the last exacerbation, since which she had lost weight very rapidly.

She was now extremely emaciated, and presented a hectic flush on each cheek. Her pulse, which numbered 120 per minute, was small and weak, and her temperature ranged from 100° to 102°, morning and evening. The rigors and sweating had returned.

*Physical examination.*—The hypogastric and left iliac regions were distended by a rounded mass, apparently about the size of the fetal head at full term. Palpation over and around the growth gave evidence that it was circumscribed and as tense as a drum, but not hard and firm, as is the case in a solid growth. Percussion gave a tympanitic resonance all over the tumor. The vagina was narrowed by the pressure on its anterior wall of a mass of indurated tissue, which appeared to be connected with the bladder, and to extend up and into the lower edge of the tumor. The uterus occupied a position posterior to the tumor, and was retroverted to the first degree. Douglas' cul-de-sac was occupied by a thin-walled, fluctuating cyst, which appeared to be about the size of a large orange. This was impacted between the uterus and sacrum, and, although it was not fixed by inflammatory adhesions, it could not be dislodged from its position on account of the sacral promontory and the posterior inclination of the uterus, which lay upon it. The uterus was therefore between two tumors, the larger one in front of and above it, and the smaller one below and posterior to it. The organ was slightly mobile from side to side. Combined vagino-abdominal palpation showed the larger tumor to be entirely out of the pelvis, and not closely attached to the uterus; but over the lower portion of the hypogastrium (the location of the indurated tissue noted above), the tumor seemed to rest on the bladder, and to be adherent to it. The sound introduced into the bladder confirmed this.

It was clear, from the history of the case and the physical signs, that we had to deal with a slow-growing cyst, which had probably been secreting pus since the occurrence of the first "chills," three years before; in proof of which we have the evidence of a mild form of septicemia, in the irregular attacks of rigors and fever, with nausea, and the gradual emaciation since that time. The tympanitic resonance in the cyst showed its contents to be in a state of decomposition, resulting in gaseous formation. It was evident that the tumor was upon and adherent to the bladder. It appeared to be a monocyst. What was its origin? The history of its development and its location—entirely above the pelvic brim—strongly indicated that it was not an adventitious cyst, the result of pelvic inflammation. In its size and the slowness of its growth, it resembled somewhat a parovarian cyst, but the character of its contents made its origin from that source very improbable, as it is exceedingly seldom that suppuration takes place in such a cyst. I know of no recorded case. The history of interference with the menstrual function, the sudden attacks of pain extending over such a length of time—thirteen years since the first one—and the presence of pus in the cyst, gave strong evidence in favor of ovarian disease of inflammatory origin.

Our patient was dying from septicemia, and if she was not already beyond rescue, she undoubtedly soon would be if not relieved.

I advised laparotomy, for the purpose of removing the cyst, if possible, or, if that should be found impracticable, to then evacuate its contents and establish drainage; and on February 16th, with the aid of Drs. Snowdon, William L. Taylor, W. A. Davis, A. W. Johnstone, and J. C. Bagg, I proceeded to operate. But we were doomed to meet with another grave complication, for when the catheter was passed preparatory to beginning the incision, several drachms of very fetid pus flowed through it. The cyst had evidently opened into the bladder, but I decided to go on with my original plan.

An incision about two inches in length was very carefully made through the linea alba, midway between the umbilicus and mons Veneris, sloping towards the peritoneum, through which an opening was made just large enough to admit one finger. With this I explored the abdominal cavity, and established the correctness of the diagnosis as to the presence of a cyst and its adhesions. Anteriorly it was adherent to the abdominal wall, and its lower surface was closely attached to the bladder, upon which it was lying. There were no intestinal nor uterine adhesions. I now determined to attempt the removal of the tumor, and therefore separated it, with some difficulty, from its attachment to the wall of the abdomen, and then increased the incision to six inches. I next passed a small aspirating needle through the cyst-wall, and drew off about a pint of very fetid pus and a quantity of gas. A sound was then passed into the bladder, and, after some maneuvering, through the opening into the cyst cavity. This served as a guide to the careful manipulations which were necessary to separate the cyst-wall from that of the bladder, without further injury to the latter viscus, and this I finally succeeded in doing. The pedicle of the tumor, which consisted of the broad ligament and a portion of the Fallopian tube, to which the left ovary was adherent, was transfixed and ligated and the tumor removed. The cyst in Douglas' pouch was now dislodged from its nest, and, after ligation of its pedicle, removed without evacuation of its contents. It proved to be a cyst of the opposite broad ligament. The right ovary and Fallopian tube being in a healthy state, were not removed. At this stage of the operation our patient, who was very weak to begin with, appeared to be dying, and it was only after repeated hypodermic stimulation and the application of external heat supplied by bottles of hot water, that she rallied. During the efforts of my friends at resuscitating the patient I was engaged with the most difficult problem which the case presented—that of closing the bladder. My plan was to elevate the organ, freshen the edges, and pass sutures. But it was so completely bound down that I could not bring it up, and I was, therefore, compelled to make my efforts at a great disadvantage. I next attempted to pass a suture with the organ in situ, hoping by that means to be able to draw up that portion of the vesical wall in which the perforation existed; but in this I failed,



because the tissues were so soft from apparent degeneration that the needle would tear through them as soon as introduced, and I was reluctantly compelled to cease my efforts at closure by that means. It was suggested that the surfaces around the opening might be grasped by a Péan's forceps and the instrument allowed to remain, the handles being brought out of the lower angle of the abdominal incision; a plan wholly inapplicable, because the tissues were in so soft and friable a state that they would very likely have broken under the pressure of the clamp, thus enlarging the hole in the bladder.

What was to be done? The patient was sinking, and immediate decision was imperative. In this dilemma the thought suddenly occurred to me that our efforts to close the opening by suture were unnecessary, because, in the separation of the adhesion, we had already furnished the means of closing it. The perforation was very small, just large enough to admit the sound; it was valvular, as is usual in suppurative perforations, and it was surrounded by a roughened, vascular surface, the result of separation of the adherent cyst from the bladder, and around it. The compression to be furnished in the external dressing would cause these freshened surfaces to be pressed together over and around the perforation, and by their immediate union would close it effectually. Acting on this idea, I at once thoroughly cleansed the peritoneal cavity, saw that all bleeding had ceased, adjusted a drainage tube, placed a catheter in the bladder, and closed the abdominal wound. The drainage tube was adjusted at the lower angle of the incision. The patient was now removed to bed, where she was wrapped in a warmed blanket and surrounded by bottles of hot water. She returned to consciousness quickly, and expressed great gratification on learning that the tumor had been removed, and said that she felt more comfortable than she had done for weeks. But her pulse and temperature did not improve, and although everything in our power was done to bring her out of it, she lingered in this condition until the next day, when she gradually sank, and died at noon.

When the catheter was introduced into the bladder, after the operation, pus first flowed through it, but this was gradually changed, so that within three hours *almost pure urine flowed, and this continued until the death of the patient. Not a drop of anything flowed through the drainage tube.*

The larger specimen, which I present, is a monocyst with a thick wall and a thick pyogenic membrane constituting its inner layer, whilst externally it is covered by a smooth, shining layer—the peritoneum. The ovary which is attached to it is in an apoplectic condition.

A review of this rare and, in some respects, unique case cannot fail to be profitable. Did we err, in view of the extremely bad condition of the patient, in advising an operation for her relief?

The presence of pus in a cyst always seriously complicates operative interference, and where extensive adhesions exist as well, and especially if the adhesions be vesical, the gravity is greatly increased; but where, in addition, the cyst has opened into the bladder and the patient suffering from purulent infection, as in our case, the prognosis becomes extremely unfavorable, if not necessarily fatal. It is also probably true that, if all the cases were reported, it would be found that a fatal result often, if not generally, follows the removal of suppurating cysts, even though the adhesions be not extensive; but where the case is abandoned recovery is so extremely rare that our best authorities agree that almost no case should be considered beyond the reach of some kind of surgical aid.

There is not much literature on this subject, but there is enough to establish the soundness of the above principle. The following case, by the late Dr. W. L. Atlee, is a strong example:

*“Pyogenic ovarian cyst, surrounded by a mass of plastic lymph, producing rapid and extreme emaciation.”*

July 27th, 1870, I operated on Mrs. W. H. B., aged twenty years. She had been tapped four times—the last time two weeks before—removing four quarts of purulent fluid each time. Before this acute attack her weight was one hundred and sixty pounds.

The cyst was immovable, and was diagnosed to be adherent at every point. Emaciation was extreme. . . . Supposed weight did not exceed sixty pounds. The tongue was very red, the pulse very small, slightly tense and quick, and one hundred and twenty to the minute.

On making a section of the abdominal wall, its structure was found to be entirely altered by inflammatory action, and the line of demarcation between it and the cyst consisted of a layer of coagulable lymph, which sealed them intimately together. The cyst, having been detached from the inner face of the abdominal wall, was emptied by the trocar of several pints of pure pus. It was now found to be adherent to everything it touched—intestines, uterus, and bladder—by a thick layer of plastic lymph. It was enucleated from this bed by shelling off the layer of lymph, which entirely invested and shielded the above-named viscera. . . . On placing the patient in bed, on her back, the spinous processes of the vertebræ were rendered so prominent by the extreme emaciation that rolls of cotton had to be placed on each side to balance and protect her.

The above case not only demonstrates how rapidly a small tumor—fifteen pounds in weight—may emaciate a patient and

destroy her vital powers, but it is particularly valuable in establishing the propriety of the operation of ovariectomy. Two weeks before the operation, paracentesis was followed by nearly fatal results, and the symptoms were so grave that her physicians assured me that, in their opinion, she must sink under another tapping. Indeed, death seemed to be impending, and was daily expected. Ovariectomy was offered only as a forlorn hope, and happily was successful."—(Ovarian Tumors, p. 33.)

Peaslee says that "inflammation and suppuration of the cyst itself does not necessitate an unfavorable result of ovariectomy. On the contrary, there is usually a remarkable subsidence of the febrile and other unfavorable symptoms immediately after the operation. I have operated successfully on a patient with a suppurating dermoid cyst, with a red tongue and total anorexia, whose pulse had been one hundred and thirty for two weeks previously. The pulse fell gradually after the operation, till at the end of twenty-four hours it was seventy-four per minute; the fever disappeared, and the appetite returned in forty-eight hours, and not a single bad symptom occurred during the patient's rapid convalescence. Mr. Wells reports three very striking cases of the kind, in which the falling of the temperature and the disappearance of the fever after the operation were remarkable. In one of them the temperature fell from 101.4° to 98.4°, and the pulse from 120 to 100 in six hours after the operation. In one of Dr. Keith's cases the cyst became inflamed and gangrenous about a week after tapping. The pulse rose to 120, and tympanites and active peritonitis supervened. The patient was better almost immediately after ovariectomy, and made a good recovery."—(p. 361.)

It will be noticed that in two, at least, of the cases above quoted, tapping had been resorted to for the relief of the grave symptoms, but it resulted in their aggravation. Simply removing the contents of a suppurating cyst by tapping or aspiration is worse than useless, because it does not remove the source from which the pus is formed nor establish a means of outlet for it, as secreted. Moreover, active inflammation and hemorrhage are far more liable to result, in a cyst of this character, because of its greater vascularity and consequent irritable condition.

Incision and drainage was the only alternative of removal,



except to abandon the case. It may be urged that, as nature had established drainage by the opening into the bladder, time ought to have been given to allow her to relieve herself. But nature finally did here, very imperfectly, what she had been begging science to do at each attack of septicemia during three years. The drainage was very imperfect, because the perforation was small—just large enough to relieve the overflow—and by the most unusual and most dangerous channel. Then, it is very doubtful if nature ever permanently cures herself by this means. The usual, if not constant, history of these cases is a very gradual drainage, by a sinuous track, until the subject is worn out. Or the flow of pus may cease, the sinus close, and apparent recovery result, when suddenly the cyst begins to refill, and opens somewhere else, this process being repeated until the patient finally succumbs to the disease. Therefore, it is not simply a justifiable procedure to aid nature in the effort to rid herself of this source of infection by establishing rapid, full, and constant evacuation of the pus sac by means of incision and a drainage tube, but it seems to me malpractice to refuse to do it.

A typical case, in support of this principle, is recorded in the *AMERICAN JOURNAL OF OBSTETRICS* for March, 1883, by Dr. Geo. F. French, of Minneapolis, Minn., in an excellent article on the "Treatment of Ovarian Cysts Having Formidable Adhesions, by Incision and Permanent Drainage."

"An ovarian tumor, 'about the size of a five-months' fetal head,' was discovered in March, 1880, tapped, refilled, and in April, 1881, inflammation suddenly occurred in the cyst, followed by discharge of pus and ovarian fluid by the rectum, and collapse of the tumor. Discharge of pus continued three months, during which time the patient's weight fell from one hundred and forty to seventy pounds. When discharge of pus ceased, the tumor again increased in size, the appetite returned, and with it increase in strength and flesh. Several months after, a swelling made its appearance in the left inguinal region, soon extended towards navel, near which it burst, discharging a great quantity of fetid pus. The discharge continued up to the last of September, always copious and fetid, sometimes sanious—when it ceased, and the opening closed. . . . The following month, however, the sinus reopened and discharged constantly all that winter. In the spring of 1882, her strength again began to fail, the stomach rejected food, emaciation ensued, and dissolution seemed impending. At this juncture, she again unaccountably rallied, regained her ap-

petite, and in a measure began to recuperate, in spite of the copious and persistent suppuration. I first saw her September 24th, at which time her weight was eighty-five pounds. . . . Four days later, I made an exploratory incision. The tumor, which was about the size of the fetal head at full term, was found to be firmly adherent to the intestine everywhere, except its upper surface. Not even the slightest space between the tumor and intestines could anywhere be discovered. There was no attachment to the uterus, bladder, or other abdominal viscera. Its enucleation was at once considered; but after separating a portion, in area equal to the surface of the palm of the hand, without discovering any lamination, but with the feeling that I was digging into solid tissues, instead of separating layers, I became alarmed lest I should make matters worse, and desisted. . . . The tumor full of pus was tapped, and the orifice was attached by sutures to the abdominal incision, through which a Thomas glass drainage tube was introduced into the tumor, and the abdomen closed in the usual manner.

Pus flowed from the drainage tube in gradually diminishing amount, until, about the thirtieth day after the operation, it ceased, and the pyogenic membrane seemed to be destroyed. The patient made a good recovery."

I am indebted to Dr. Goodell for the notes of the following unpublished case, in the operation upon which I had the honor of assisting him.

"B. R., æt. thirty-two; married; two children; youngest eleven years. She was for some time an inmate of one of our hospitals, where she was treated for typhoid fever, followed by pain in the left groin, and later by pus in the urine. She was then examined carefully and treated for cystitis. Not improving, she left the hospital and was brought to me, October 3d, 1881, by Dr. Charles A. Currie, who had discovered a tumor. Her catamenia were absent from February to July, but had been regular since then. Large quantities of pus, sometimes mixed with urine, sometimes almost pure, came from the bladder.

I found a cystic tumor as large as a child's head above the left groin. It extended down the left side of the womb, pushing it to the right. The uterus was slightly mobile, and measured three inches.

Diagnosis: Suppurating ovarian tumor, which had opened into the bladder.

After waiting more than three months, and finding that the flow of pus did not diminish, I, on January 24th, 1882, made an abdominal incision and found that the tumor was undoubtedly an ovarian cyst, and not a pelvic abscess. It contained about a quart of pus, was wholly attached to the bladder, and ran down on the left of the womb into Douglas' pouch, to which it was also attached. It had plainly a communication with the bladder, for pure pus was often passed distinct from urine. This opening

I could not find, and it was evidently either valvular, or high up on the cyst, because the latter was always full. I put a glass drainage tube in, and stitched the opening of the cyst to the incision. I did not attempt to remove the tumor, because it was so adherent to the bladder, uterus, and all the pelvic tissues that its free surface was not larger than a silver dollar.

Pus was found in the urine on the next day after the operation, but not afterwards. The drainage from the tube was at first great, but it gradually grew less, so that on the sixteenth day from the date of incision it was removed, and a rubber one inserted. She eventually got perfectly well, and was married to a second husband, a few months later."

Whilst these two cases give the strongest kind of evidence favoring incision and drainage, and furnish a method of treatment for just such cases, they should not be allowed to weigh against what ought to be a fundamental rule, viz., that, where it is at all practicable, the tumor should be removed. In both, drainage had been progressing for a long time previous to the operation, and they were therefore accustomed to it, and, what is of greater importance, they were by the outlet which the pus had found protected from the absorption to which my patient was constantly subjected. Consequently, their blood was in a much better condition to rebuild itself and the other tissues than in my case. In them, pulse and temperature were not much impaired, and appetite and strength were fair. Just the opposite existed in our patient. There were no important adhesions in the latter case, except those of the bladder, which are always formidable, of course, but not necessarily fatal, whereas in the former the attachments of the tumors were so extensive that removal would have been impossible without fatally wounding important viscera.

I considered my case beyond the power of recuperating under drainage, accepted the other alternative, and removed the cyst.

Mr. T. Spencer Wells, speaking of drainage, says: "Even then patients are so apt to suffer from the ill effects of long-continued suppurative processes, that I am more than ever confirmed in the opinion that it is better, even at considerable risk, to remove a cyst, if at all possible, than to trust to any mode of drainage." (*Ovarian and Uterine Tumors*, p. 176.)

Our patient died from the exhaustion brought about by the long suffering, and constant presence of decomposed pus in the



cyst, and not alone as a result of its removal. Undoubtedly, the operation was the *immediate* cause of death, but it gave her a chance for life, and did not shorten it many days.

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A CASE OF FIBRO-CYST OF THE OVARY,

WITH REMARKS.

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BY

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New York.

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IN a paper on "Fibromata and Cysto-Fibromata of the Ovary," published in a late number of the JOURNAL OF OBSTETRICS, the writer stated his belief that this form of ovarian tumors was not so rare as it had been generally supposed, basing his opinion, not only upon a collection of published cases, but also upon the fact that two had occurred under his own limited observation. Notwithstanding Tait's adherence (in the recent edition of his work<sup>1</sup>) to an opinion before expressed, that "growth of the fibrous stroma of the ovary, so as to form a large abdominal tumor requiring removal, has not yet been described," the writer has during the past three months met with at least four reports of authenticated cases, and examined two undoubted fibro-cysts of the ovary. An ovarian cyst was recently presented at the New York Pathological Society, which would have passed unnoticed had not the practised eye of a pathologist recognized in it a beautiful example of fibro-cystic disease. In this instance, the solid portion of the tumor had entirely disappeared, so that it was only to be distinguished from a *fibrous* cyst (*i. e.*, a cyst with secondary fibrous thickening of its wall) by the uniform thickness of the wall, and the absence of the usual three layers. The absence also of a cellular lining to the sac was especially significant. The second case, to be briefly mentioned in this article, was of great interest to the writer, since an examination of the specimen served to strengthen his confidence in the

<sup>1</sup> Diseases of the Ovaries, fourth edition, p. 158.

correctness of certain deductions made at the end of his former paper.

A colored woman, fifty-three years of age, and married, entered the Woman's Hospital with a history of normal menstruation and confinements. Five years before, a small, hard lump had appeared in the left inguinal region, which had grown slowly, occasioning no symptoms aside from the feeling of discomfort, due to the increasing weight of the tumor. She was examined by Dr. Thomas, who found a solid mass, movable freely from side to side, but not upward, with apparently a thin-walled cyst superposed upon it. The possible diagnosis of ovarian cyst, complicated with uterine fibroid, was made. Previous to operation, however, Dr. Thomas stated that he was doubtful about the existence of an ovarian cyst, never, in his large experience, having met with such a growth in one of the colored race, fibro-cysts of the uterus being far more common.

The operation was a simple one. On opening the abdominal cavity, a large pearly-white mass, evidently cystic, appeared in the wound. This was tapped with a trocar, and twenty pounds of clear, straw-colored fluid evacuated, which coagulated to a solid mass within a few minutes. No blood was lost. On drawing the tumor out of the pelvis, it was found to be cystic in its upper three-fourths, the lower fourth being solid, and attached by a long, cord-like pedicle to the left ovary, half of which organ still remained intact. The pedicle could not be traced further than the ovary. The uterus and other appendages were not involved, the right ovary being normal.

The adhesions were trifling, and the growth was removed in the usual manner. The case progressed favorably, and the patient was discharged cured four weeks after operation.

The specimen obtained weighed between four and five pounds, and was, as before stated, partly solid and partly cystic.

The cut surface of the solid portion bore an exact resemblance to that of an ordinary uterine fibroid, both in its gross and microscopical appearance, that is, to a fibroid in a state of cystic degeneration, for the upper portion of the mass adjacent to the cyst was filled with the "geodes" so commonly observed under these circumstances. The cyst cavity was without a lining membrane, and in its wall, of varying thickness, no definite arrangement of the tissues into layers could be discovered. Ragged bands of fibrous tissue stretched across the cavity or were adherent to its wall, and several masses were detached, and floated in the contained fluid. These were identical in structure with the solid portion of the tumor.

Fresh scrapings from the fibrous wall of the central cyst and from the walls of the "geodes" of all sizes showed under the microscope an absence of cellular elements. This was also noted in the examinations of the fluids from the large, and smaller, cysts, which both chemically and microscopically much resembled lymph. The portion of the ovary removed with the tumor was composed of the ordinary stroma, somewhat hypertrophied. The examination of hardened sections added nothing to the above-mentioned facts.

Not to enter into further details upon a subject which the writer has already treated at length, it will be granted that this was a true fibro-cyst of the ovary. The points to be especially noted are:

1. The fact that the tumor was of undoubted ovarian origin. The fundus uteri and adnexa were completely exposed during the operation, so that the growth could not have been a uterine fibroid with a long pedicle, or even one springing from the tube or broad ligament—all of which origins have been suggested by writers sceptical of the existence of true ovarian fibromata.<sup>1</sup> The pedicle was traced directly to the ovary, a portion of the organ (containing the normal stroma) being fused with it; hence

2. It is evident that this tumor arose, not by an entire transformation or degenerative process, involving the whole ovary, but simply as an outgrowth from a portion of that body. In this connection, the writer would refer to one of the deductions made in his former paper, viz.:

"These fibromata originate, not by a local change, but as the result of a general hyperplasia of the ovarian stroma. Moreover, there is nothing to show that this process is of an *irritative* or *inflammatory* character."

The present specimen was of special interest, since it presented side by side the normal and hypertrophied stroma.

3. Microscopic examination of the walls of the "geodes" and of the contained fluid, sections through these small cavities and their neighborhood—all served to confirm the writer's opinion that no endothelial lining can be found in such commencing cysts at any stage of their development.

<sup>1</sup> Wells: *Diseases of the Ovaries*, p. 49. Klob: *Path. Anat. Female Sex. Organs* (Trans.), pp. 161, 163. Atlee: *Ovarian Tumors*, p. 262.



4. No additional light was thrown upon the precise origin of cystic degeneration in fibroids by an examination of this specimen. The character of the fluid, its spontaneous coagulation without admixture of blood, and the general microscopical appearances of the tumor were in favor of the theory of lymph-stasis, but no extrinsic cause could be found. The pedicle was indeed long and slender, but there were no signs of interference with the circulation in the nutrient vessels.<sup>1</sup>

Practically, the inference is that a positive diagnosis of fibrous or fibro-cystic tumor of the ovary cannot be made until after the abdomen is opened, and not always then, unless the relations of the adjacent parts are carefully noted. Doubtless many of these rarer varieties of tumors have been overlooked, by operators not specially interested in pathological study.

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## THE TOPOGRAPHICAL RELATIONS OF THE FEMALE PELVIC ORGANS.

BY

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Part V.

(Concluded from page 578.)

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*“Actions of the Perineal Muscles.*—The *bulbo-cavernosus* which is analogous to the lateral half of the accelerator urinæ muscle of the male, unquestionably assists in compressing the bulb of the vagina, and it may also similarly affect the vulvo-vaginal gland of the corresponding side. It is possible that it assists, as in the male, in creating and maintaining an erection of the clitoris by creating compression of the dorsal vein of the clitoris, and by forcing blood into the cavernous structure of that organ from the bulb of the vagina.

“The *transversus perinei* serves to steady the central point of the perineum, when acting with its fellow, in order that the

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<sup>1</sup> Leopold has suggested twisting of the pedicle as an explanation of the “edematous softening” seen in fibroid tumors.

other muscles which are attached in that vicinity may have a firm point from which to act. It seems reasonable also to attribute to this muscle, as was first suggested by Cruveilhier, the function of antagonizing the action of the levator ani, which tends to draw the anus upward and forward.

"Besides contracting the anal integument, the *external sphincter of the anus*, by virtue of its attachment to the perineal body and the tip of the coccyx, assists the levator ani in giving support to the opening during the expulsive efforts of defecation. Its fibres are intermingled with those of the bulbo-cavernosus muscle.

"The *levator ani*, as its name would indicate, tends to raise and support the rectum and vagina during expulsive acts. In the female, the pubo-coccygeal portion also acts as the sphincter muscle of the vaginal canal, and, possibly, of the urethra also after the vagina is collapsed. It is the physiological antagonist of the diaphragm in its action upon the pelvic viscera, as it rises and falls in unison with it during forcible respiration. When the action of the abdominal muscles is excessive, it yields, and thus enables the pelvis to bear a greater force than a more resistant structure; and, on the remission of such an action, it restores the perineum to its original form.

"The *coccygeus* muscle helps to restore the coccyx to its normal position after it has been pressed backward during parturition or defecation.

"The *erector clitoridis*, by its insertion into the sheath of the crus, may possibly assist in maintaining the erection of the clitoris by compressing the corpus cavernosum. Its size would seem to be in excess of that required to simply maintain a steadiness of that small organ, which is so necessary to the proper performance of the functions of the penis.

"BLOOD-VESSELS OF THE FEMALE PERINEUM.—The blood supply to the perineal structures is derived from the branches of the internal pudic artery. It will be well, therefore, to trace the course of this vessel before describing its branches.

"The *internal pudic artery* arises from the anterior trunk of the internal iliac; escapes from the pelvic cavity through the great sacro-sciatic foramen; re-enters it, after passing around the spine of the ischium, by means of the lesser sacro-sciatic foramen, and then gives off its branches. It is accompanied

throughout its entire course by its veins and nerve.<sup>1</sup> As its relations are of importance in performing operations upon the perineum, more detail seems to be demanded as to the course of the main trunk and the general distribution of the vessels which take their origin from it. As it crosses the spine of the ischium, the gluteus maximus muscle and the great sacro-sciatic ligament cover it. From that bony point it traverses the cavity of the pelvis, lying to the outer side of the ischio-rectal fossa and upon the internal obturator muscle, till it reaches the ramus of the pubes, along which it then ascends. It is enveloped, in company with its nerve and veins, *in a sheath formed of the obturator fascia and a fulciform process of the great sacro-sciatic ligament* for that portion of its extent where it lies in relation with the internal obturator muscle, which can be defined by measuring about one inch and a half from the anterior margin of the tuberosity of the ischium. As it ascends along the ramus of the pubes it pierces the posterior layer of the triangular ligament of the perineum, then passes for a short distance in a canal between the two layers, and subsequently perforates the anterior layer of the same fascia near the symphysis before it gives off its terminal branches—the artery of the corpus cavernosum and the dorsal artery of the clitoris. The anterior margin of the pubes is a guide to this vessel for the greater portion of its course after it enters the lesser sacro-sciatic foramen. Incisions approaching the rami are therefore associated with great danger of hemorrhage. This artery in the female is much smaller than in the male.

“The branches given off by this large vessel within the perineum include the following: 1st, the inferior hemorrhoidal; 2d, the superficial perineal or vulvar artery; 3d, the transverse perineal artery; 4th, the artery of the bulb; 5th, the artery of the corpus spongiosum; 6th, the dorsal artery of the clitoris.” Many of these branches have been discussed to some extent in those pages which treat of the structures with which they bear relation. As the descriptions of the analogous vessels of the male will answer in most instances for those of the female, I

<sup>1</sup> Two large veins usually accompany it. Savage, Ford, and Ellis give this as the normal number.

<sup>2</sup> In exceptional cases the internal pudic artery gives off a *vaginal* and *uterine* branch.



will simply enumerate such points pertaining to each of these six branches as will bear directly upon what has preceded.

“The *inferior* or *external hemorrhoidal arteries* comprise two or three small vessels which are given off from the internal pudic as that vessel crosses anterior to the tuberosity of the ischium. They run across the ischio-rectal fossa, through the mass of fat which helps to fill that fossa so as to bring its level up to that of the perineum proper, and are distributed to the sphincter and levator ani muscles, and the skin and parts about the anus. They are the chief sources of hemorrhage from all superficial wounds about the anus or the ischio-rectal fossa. These vessels have veins which accompany them and empty into the pudic veins.

“The *superficial perineal* or *vulvar artery* is given off in front of the preceding branches. It pierces the obturator fascia and the anterior layer of the triangular ligament (deep perineal fascia), and then crosses the transverse perineal muscle to reach the triangular space between the bulbo-cavernosus and the erector clitoridis muscles. It then passes forward through the deep layer of the superficial perineal fascia, in which respect it differs from the male vessel. It is distributed to the vulva, and sends branches also to the muscles which are situated between the deep layer of the perineal fascia and the anterior layer of the triangular ligament. It is a source of arterial hemorrhage in wounds of the vulva. In the male, it supplies the scrotum, thus supporting the analogy between the vulva and a lateral half of the scrotum.

“The superficial perineal artery is accompanied by two veins, and anastomoses with the pudendal twigs derived from the superficial pudic branches of the femoral artery.

“The *transverse perineal artery* is a smaller branch than the one just described. It pierces the deep layer of the triangular ligament to reach the transverse perineal muscle, along whose cutaneous surface it is distributed, as well as to neighboring parts between the anus and the bulbs of the vagina. Like the preceding artery, it is situated beneath the deep layer of the superficial perineal fascia. It may be a source of hemorrhage in laceration of the perineal body, or wounds of the perineum which are forward of the anus, and not in the median

line. It occasionally sends a small branch to the vulvo-vaginal gland, and usually one to the bulb of the vagina.

“The *artery of the bulb* is a vessel of considerable size, but short. It arises from the internal pudic artery between the layers of the triangular ligament of the perineum, whose anterior layer it subsequently pierces, and sends branches to the bulb of the vagina of the same side. It also sends twigs which supply the meatus urinarius. This vessel has a surgical importance in the male which is wanting in the female, as it is a source of dangerous hemorrhage in lithotomy, if wounded. The erectile tissue of the vaginal bulb is partly supplied by this vessel. The close proximity of the bulbs of the vagina to the labia minora renders their removal a source of a troublesome wound, which cicatrizes slowly.”

The two terminal branches of the internal pudic—the *artery of the corpus cavernosum* and the *dorsal artery of the clitoris*—are the supplying vessels of the erectile tissue of the clitoris. The former (a small branch) supplies the crus; while the latter (a vessel of larger size) passes along the dorsum of that organ and is distributed chiefly to the covering of the clitoris and the fibrous sheath of the crus. A free communication exists between the branches of both vessels. Sometimes both of these arteries are given off after the pudic artery has perforated the anterior layer of the triangular ligament near the sub-pubic ligament. When the clitoris is amputated, the two dorsal arteries may require a ligature. The vessels of the corpora cavernosa can usually be controlled by simple pressure, as the trabeculæ favor coagulation of the escaping blood, and thus tend to occlude the wounded arteries.

The *veins of the perineum* have been discussed, to some extent, on a preceding page. It is important to remember, however, that the veins of the perineum are afforded a free anastomosis with the intra-pelvic venous plexuses, since no valves exist in these vessels to prevent the flow of the venous current in any direction. These extensive anastomoses explain the occurrence of fatal hemorrhage from wounds of the vulva and vagina, as well as the surgical conditions designated as hematocele and varices. Savage enumerates a long list of these cases, where the symptoms are to be explained purely on anatomical grounds.

**THE NERVES OF THE FEMALE PERINEUM.**—The branches of the internal pudic nerve and the inferior pudendal branch of the small sciatic nerve are distributed to the perineum of the female, and follow about the same course as in the opposite sex.

The *pudic nerve* arises from the lower part of the sacral plexus, and escapes from the pelvis through the great sacro-sciatic foramen. It re-enters the pelvis, after passing around the spine of the ischium, through the lesser sacro-sciatic foramen, and follows the course of the internal pudic artery and its veins, with which it bears a close relation from the point where those vessels reach the border of the ramus of the ischium. It is covered, as is also the artery, by the obturator fascia during its passage through the ischio-rectal fossa; and, subsequently, by the anterior layer of the deep perineal fascia, after reaching the level of the perineum. The branches which escape from it are successively as follows: The inferior hemorrhoidal, superficial perineal, deep perineal, muscular, and the dorsal nerve of the clitoris.

The *inferior hemorrhoidal nerve* is occasionally derived from the sacral plexus. It is given off by the pudic nerve in the majority of subjects, however, and accompanies the vessels of the same name. It crosses the ischio-rectal fossa and is distributed to the external sphincter muscle of the anus and the integument of that region. It communicates, by means of its branches, with the superficial perineal nerve and the inferior pudendal branch of the small sciatic nerve.

The *superficial perineal nerves* are generally two in number. They are called the anterior and posterior; since their areas of distribution differ. The former send filaments of distribution to the integument of the labia, and the mucous covering of the clitoris, while the posterior sends branches chiefly to the skin of the anal region. The anterior nerve sends a filament to the levator ani muscle.

The *deep perineal nerve* is the larger of the two terminal branches of the pudic nerve. It accompanies the superficial perineal vessels, and is distributed to the integument of the vulva, the bulbs of the vagina, the vulvo-vaginal gland, and the muscles which are situated immediately beneath the deep layer of the superficial perineal fascia.



The *muscular filaments* of the pudic nerve are distributed to the bulbo-cavernosus, erector clitoridis, and compressor urethræ muscles. They are derived chiefly from the deep perineal nerve.

The *dorsal nerve of the clitoris* accompanies the pudic artery between the two layers of the triangular ligament, pierces the suspensory ligament of the clitoris, and terminates upon the dorsum of that organ. It anastomoses with the inferior pudendal branch of the small sciatic nerve. Savage states that the nerve supply of the clitoris is greatly in excess of that of the glans penis.

The pudic nerve is stated to have been successfully divided for the relief of that distressing condition, termed vaginismus. If Burn's operation be performed, as described by most authors on gynecology, it is certain that the pudic nerve is not divided, as the incision would fail to reach the situation of that nerve. In fact, the nerve lies so close to the internal pudic artery, that an incision would have to be carried almost to the extreme limits of the perineal boundary to expose it. There is only one spot in the entire course of that vessel where a ligature can be safely applied to it—viz., just before the artery enters between the two layers of the deep perineal fascia—and I doubt if the nerve could be safely divided elsewhere. The criticism of Thomas as to the efficacy of this step, as practised by Sir Jas. Simpson, seems to me to be well sustained on anatomical grounds.

CLINICAL POINTS SUGGESTED BY THE ANATOMY OF THE FEMALE PERINEUM.—The bearings of anatomy upon the conditions of pudendal hemorrhage, pudendal hematoma, pudendal hernia, urethral prolapse, abscess of the vulva and ischio-rectal space, cysts, and abscess of the vulvo-vaginal glands, vaginal prolapse, rectal prolapse, vesical prolapse, and urethral caruncle, are of the greatest importance, as tending toward a better knowledge of these diseases and the methods of treatment indicated.

*Pudendal Hemorrhage.*—The bulbs of the vagina, and the extensive anastomosis of large veins in the region of the vulva, account for the occasional occurrence of severe hemorrhage from wounds of that region. The erectile venous system of the female (whose exterior part comprises the vaginal bulbs and also veins, which communicate both with it and each other in the peri-

neum) is afforded a free communication with the veins which form plexuses upon the internal pelvic viscera; hence, any wound of the region of the labium may draw blood from the venous plexuses of the pelvis, the superficial epigastric veins, the transverse perineal veins, the hemorrhoidal veins, and from all the other tributaries to the internal pudic vein.

This subject was first brought to professional attention in 1830 by Simpson, who reported several cases of fatal hemorrhage from wounds of the vulva. It has been known to follow muscular efforts, without an apparent injury,<sup>1</sup> although incisions, blows, and punctures are the most common causes. It seems probable that those cases where the hemorrhage has been very severe have been associated with a rupture or wound of the bulbs of the vagina. These erectile structures lie in close relationship with the internal borders of the labia minora, and tend to explain the hemorrhage which sometimes follows excision of those parts, and the difficulty often experienced in establishing cicatrization afterwards. The free anastomosis between the veins of the pelvis and perineum would seem to indicate an easy method of extension of inflammatory processes from superficial parts to the pelvic structures.

*Pudendal Hematoma.*—This condition is sometimes called “pudendal hematocele;” but the term “hematocele” is now confined, by long usage, to effusions of blood into serous sacs, and is, therefore, in my opinion, a misnomer. The condition might be designated as a “thrombus,” with more regard to accustomed usage, although the name employed here seems to me to be the best one, because “thrombosis” is a term more commonly applied to the coagulation of blood within a blood-vessel. The surgical condition under consideration consists of a mass of blood within the labium or the areolar tissue which lies in close relation to the wall of the vagina. As a consequence, a tumor is discovered which fluctuates at first, but which tends to become hard as the blood coagulates. If suppuration be established, fluctuation may be again developed, and a tendency “to point” may be detected later. It seems to be well proven that this escape of blood is more common in the pregnant

<sup>1</sup>Simpson reports a case which was caused by the straining efforts during defecation.

female' than in the non-pregnant and virgin state. It is often the direct result of parturition, the bulbs of the vagina having, in some way, become ruptured. It may demand incision and the evacuation of the blood-clots.

*Pudendal Hernia.*—In the labia majora, there exists, as in the scrotum of the male, two sacs (one in each) which may admit of a hernical protrusion of intestine or omentum. These sacs, called the "pudendal sacs," have been described elsewhere by the author.<sup>2</sup> They bear an analogy to the scrotal cavity, although the peritoneum is not carried downward to form a separate sac, as in the male, by an organ descending from the abdomen. It is true that a prolongation of peritoneum (the canal of Nuck) invests the round ligament of the uterus as far forward as the lower limit of the inguinal canal, but it does not line the pudendal sac. This peritoneal pouch is usually obliterated in adults, but it may become distended by fluid, intestine, omentum, the bladder, ovary, or uterus. Intestine and omentum are the more common structures, however, which suffer extreme hernial displacement. It is seldom that the limits of a hydrocele effusion extend in the female below the anterior opening of the inguinal canal. Barnes has lately written up hernial displacements of the ovary, in a masterly style (see bibliography attached to this article).

Pudendal hernia is to be differentiated from a hydrocele of the canal of Nuck, abscess and tumors of the vulva, hematoma, and surgical affections of the vulvo-vaginal glands. It is possible for an inguinal hernia to become strangulated in the female by muscular spasm, edema, etc. A condition of permanent irreducibility may be developed, without strangulation, by a deposit of fat in the coats, or a simple thickening or adhesion of the coats themselves, provided the hernia be allowed to remain long unreduced.

*Urethral prolapse.*—In the enfeebled and the aged, the mucous coat of the urethra and its underlying connective tissue is occasionally subject to eversion, thus causing a red, sensitive tumor, at the situation of the meatus urinarius, which shows a tendency to bleed when handled. This condition has

<sup>1</sup> The pregnant state tends toward an enormous increase in the blood supply of the sexual organs. This may tend to explain the especial liability to rupture of vessels during this period.

<sup>2</sup> The Female Perineum. N. Y. Med. Jour., July and August, 1882.



been described by Guersant as occasionally present in young girls, since he states that he has seen it in fifteen cases between the ages of two and twelve years. It should be differentiated from the conditions of urethral polypus, irritable caruncle of the meatus, venous angioma of the urethra (as described by Savage), and villous growths.

*Abscess of the vulva.*—The labia are subject to phlegmonous and suppurative inflammation as the result of direct injury, irritating vaginal discharges, vulvitis, and certain states of the blood which particularly tend toward the development of anthrax and furuncle. If suppuration be manifest, an early incision will relieve the dangers of fistulous openings into the rectum, the extension of the suppurative process to the ischio-rectal fossa, and constitutional infection, as the parts seem to resist all tendency to spontaneous evacuation.

*Cyst and abscess of the vulvo-vaginal glands.*—We owe much of our knowledge of the diseased conditions of these glands to Huguier. Their anatomy has been made a subject of special investigation by Bartholin, after whom the glands are commonly named, and also by Morgagni, Huguier, and Duverney; but I am inclined to regard their description as incorrect. They are analogous to Cowper's glands of the male, but differ occasionally from them in their situation. They seem to be placed posterior to, and in some cases between, the layers of the triangular ligament, while Cowper's glands lie invariably between its two layers.<sup>1</sup> This is possibly to be explained by the fact that the cavity of the triangular ligament of the male is more commodious than that of the female. These glands open into the vulva, just in front of the attachment of the hymen, by small ducts (whose canal will admit a hog's bristle), the length of which is usually estimated as varying from three-fifths to three-quarters of an inch. Now, if the mouths of these small ducts become occluded from any cause, the secretion of the gland continues to form and is unable to escape; hence a cystic tumor is created by compression and absorption of the substance of the gland itself. Under certain circumstances these glands take on a suppurative condition, resulting in

<sup>1</sup>I have given in detail the results of my dissections of these glands in my article upon the female perineum. They differ markedly from those of the authors quoted.

abscess. In the case of cystic distention, the tumor will be circumscribed, elastic, and movable; it will also be much less painful than an abscess of these glands. Either condition must be differentiated from phlegmon of the labium by its small size and circumscribed limits, and from a boil by its apparent depth from the surface. Cysts are generally painless to the touch, and may exist for years without causing marked inconvenience. The close relation of this gland to the *deep perineal* branch of the internal pudic artery renders the operation for its extirpation a bloody one.

*Prolapse of the vagina.*—This condition is very rare, except in those who have borne children. Meigs, however, reports a case which occurred in a child, only a few months old, as the result of a convulsive attack; and a case is also mentioned by Cooper of the same condition being developed at the age of seventeen years. In spite of such exceptional cases, it may be said that pregnancy, which causes the vaginal structures to become greatly hypertrophied, tends especially to produce it. Anything which would create a relaxed condition of the anterior wall of the vagina or the sacro-uterine ligaments, might allow of the protrusion of the vaginal tissues through its own orifice, but the relations of these structures would necessarily entail upon such a displacement a simultaneous alteration in the position of the bladder, intestine, and uterus from the attitude assumed in health. It is common, therefore, to find this condition included by authors under prolapse of the uterus, cystocele, and enterocele. Considerable stress has been laid by Thomas upon laceration of the perineal body as one of the most frequent causes of prolapse of the posterior wall of the vagina and the anterior wall of the rectum. This is unquestionably a prominent factor in such a displacement. A glance at the diagram published by myself (Fig. 11) will enable the reader to appreciate a theoretical function of the perineal body to which Hart and others have called attention, viz., to assist in deflecting the feces through the anal canal (which forms almost a right angle with that of the rectum). He urges the great frequency of rectal prolapse after laceration of this body as one of the proofs of this function. Regarding the questions whether the vagina can be prolapsed without displacement of other organs of the pelvis, or whether the

mucous coat of that tube can be prolapsed without disturbing its other coats, authors of note differ. From a purely theoretical stand-point, the opinion of Savage, that "prolapse of the vagina alone, or prolapse of the vaginal mucous membrane alone, are two affections which, anatomically considered, would seem impossible," is in accord with my own convictions.

*Prolapse of the Bladder.*—The condition, called "cystocele," may be evidenced, in bad cases, by a tumor appearing between the labia majora. From what is known of the topography of the bladder, it must be evident that no downward displacement can occur without an extreme relaxation of the anterior wall of the vagina, since that is its normal support below. It is usually present in women who have suffered some alteration in the normal tonicities of the parts from child-birth. The consequences of this deformity are to produce a pouch, from which the urine cannot be expelled on account of the internal urethral orifice being situated above the level of the most dependent part. This induces *decomposition of the urea* of the residual urine into carbonate of ammonia, which is a powerful irritant; hence a cystitis soon follows, as indicated by pain, heat, an increased frequency of micturition with vesical tenesmus, and a peculiar scalding sensation during the act. It has been maintained by Scanzoni, and some other authors, that this condition of the bladder may in some instances be the cause of the vaginal prolapse, and thus a primary disease rather than a sequel of vaginal relaxation. The question of diagnosis of cystocele is easily made by the employment of a sound introduced within the bladder.

*Prolapse of the rectum.*—This condition may exist as a consequence of laceration of the perineal body, or independently of it. The former variety has already been spoken of under the discussion of prolapse of the vagina. The independent variety may be the result of a general lack of the tonicities in the rectal walls, and also of all conditions which tend to produce excessive straining efforts, such as hemorrhoids, fecal impaction, polypi, etc. The tumor may be extremely large, and is to be diagnosed from hemorrhoidal tumors or polypi by the fact that it involves the whole circumference of the gut. In weak children, this condition is not infrequent.

*Urethral caruncle.*—At the meatus urinarius, and sometimes



for some distance along the wall of the urethra, little vascular excrescences occasionally appear, which render the urethral canal extremely irritable and occasion great suffering. They are very vascular, and are rich in nerves (Reid); hence they bleed freely, and are exceedingly sensitive to the touch. Wedl, who has investigated their structure, states that very consist of hypertrophied papillæ, and that an excessive development of areolar tissue accompanies this hypertrophy. Savage classes them as "pseudo-angiomata"; and claims to have discovered cysts filled with mucus within them. Age or parturition seem to exert no influence upon their development. They are to be differentiated from urethral prolapse, and syphilitic growths. Their situation often creates intense suffering when micturition is performed. Thomas reports cases of suicide from the misery entailed by these small excrescences. For some unexplained reason, removal of these growths is often followed by a return of the condition.

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## VESICAL IRRITATION IN THE FEMALE.

BY

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THE simple question of irritable bladder is one of great vexation to the physician, and the affection is one which entails much distress and suffering on the patient. To determine the

remedy most applicable for its relief and cure necessitates the closest scrutiny as to the cause which has given rise to the trouble.

Undoubtedly women are the most frequent sufferers who apply for relief. But all of us have seen vesical irritation in children, due to rectal irritation from thread worms, the irritation being reflected from the rectum to the bladder, a class of cases speedily relieved by the injection of a bitter infusion, as quassia, into the rectum. Again, in male children, reflected irritation from an elongated prepuce, circumcision being the remedy here. In the adult, fissure of the anus, hemorrhoids, fistula, sexual neurasthenia, and in men enlarged prostate and stricture may all manifest themselves in part by a reflex vesical irritation, causing much suffering to the patient.

These may be denominated eccentric causes—centric causes being those which, to use the term in its broadest sense, pertain to the urinary system, bladder, kidneys, or urethra, to a portion of that system as an excretory apparatus, but more especially to the bladder as a reservoir for the urine till it can be normally voided.

To illustrate: There may be a separation from the blood, by the kidneys, of excessive amounts of oxalic acid, or of the urates; there may be a diabetic condition; there may be organic disease of the kidneys themselves, or there may exist cystitis, acute or chronic, primary, or from the presence of stone, or there may be reflected irritation from the urethra, where stricture exists, causing agonizing pain from spasm of the vesical sphincter brought on by frequent efforts to void the urine, and the inability to fully empty the bladder, the urine becoming decomposed, and thus a secondary cause of trouble. These are troublesome cases. In the female, caruncle in the urethra may give rise to most annoying vesical irritation, and as the part involved is contracted in extent, it is often the case that this affection is overlooked, and all remedies prove alike unavailing, causing the attendant physician much anxiety and solicitude.

But I propose to discuss solely the vesical irritation occurring in women, and the causes to which it is to be attributed, with a view to solve the problem of its management and cure. Now, in these cases, a correct diagnosis of the cause is of the



utmost importance. Is it due to organic disease of the bladder; is it functional; or emotional; or is it due to reflected irritation from disease of the os and cervix, or the existence of uterine tumors or displacements; or what?

One of the most common sources of vesical trouble is that which is caused by pressure from the gravid womb, especially when the woman has borne many children; the abdominal walls in consequence of frequent stretching have lost their resiliency, and weight upon the fundus of the bladder causes a constant desire to urinate, the patient only being comfortable when in the recumbent position, allowing the uterus to drop back, and remove the pressure on the bladder. I am in the habit of advising for the palliation of these cases the wearing of a properly adjusted bandage, gored and sloped, so as to fit the hips snugly, and thus strengthen the relaxed abdominal walls by the support of the womb externally. Of course, permanent relief does not come to these cases until after confinement relieves the cause.

But the most common of all causes is some uterine disorder affecting the bladder directly or through reflex sympathy. The treatment demanded in these cases is to remove the cause by cure of the uterine malady. No direct treatment of the bladder is necessary, and if relied on alone, will only prove unavailing. Take a few cases in point:

CASE I.—Mrs. —, from Halifax Co., Va., came to me some years ago complaining of great vesical irritation, and saying that her physician at home said she had chronic inflammation of the bladder. She had taken various remedies for its relief, directed solely to the bladder, but the trouble only grew worse. She gave the history of a natural twin labor about a year before, but with a bad getting up, had suffered much with pain in back and profuse leucorrhea. Physical examination revealed an enlarged cervix and ulcerated os. Under appropriate treatment, this condition was soon relieved, and she returned home well of all vesical distress without a single remedy having been directly addressed to the bladder.

CASE II. was that of Mrs. B., of this city. She had suffered for some time from great distress from the frequent desire to pass her water, and in addition had extensive eczematous eruptions on her arms and lower extremities, with copious leucorrhea. Examination showed ulceration of os and endocervicitis. Treatment addressed to the cure of the uterine ailment soon relieved the other troubles.

CASE III. was that of Mrs. R., also of this city. When called to see her, she was in a most pitiable plight. Like the woman in the Bible, she "had suffered many things" from many physicians, and was rather worse off, the entire treatment having been directed to the bladder, one diagnosis having been stone!! and chronic cystitis! She was found to be suffering with aggravated cervical disease, with hemorrhoids as a complication. I was unable to discover any lesion of the bladder. Treatment addressed entirely to the relief of the womb trouble in due time restored her to perfect health.

The above cases will suffice, though they might be multiplied. In my experience, endocervicitis, with its consequent ulceration, has been more frequently the cause of vesical irritation, perhaps because this trouble is the most frequent of the uterine troubles with which we have to deal. The point I would make is the suggestion that *this lesion of the cervix*, or *laceration*, or *carcinomatous disease*, or, in other words, *any lesion of the cervix*, causes, *because of its greater nervous sensibility*, vesical irritation, much more frequently than where the disease is located in the corporeal lining, or in the substance of the womb itself, or its appendages. Of course, we see many cases which are due to what we may denominate a mechanical cause, where there is pressure from a displaced womb, or where there is fibroid or other tumor of the womb. These mechanical causes are, of course, to be relieved by a properly adjusted pessary. Now, we have another class of cases, emotional, occurring in those women who are run down, as in school girls, where the nervous system has been overtaxed by study, and they have become hysterical and chlorotic, or in married women suffering from sexual neurasthenia, brought on by abuse of the sexual relation. Change of air and scene, and an active ferruginous and tonic treatment, are the indications in these cases. Now, the two classes of cases we have just discussed are in striking contrast, and demand, as we have seen, very different management. The history of the cases, general appearance of the patient, enable us to distinguish them. With regard to the first, we cannot err if we in the beginning make a thorough examination of the womb for trouble which manifests itself by a reflected irritation of the bladder. In the second, we have cases which can only be aggravated by any local interference whatever.

The most troublesome cases of vesical irritation are due to

vesical catarrh, caused by pinching of the bladder in protracted labor between the head of the child and the pubic bone, or from overstretching by prolonged retention of the urine, or by the presence of stone. If the irritation be due to outside causes (uterine), great relief will be experienced from the recumbent posture; but where due to vesical catarrh, this will not be the case (Goodell).

It may be that irritation may be caused by some lesion of the vesical sphincter, as fissure, occurring during labor; but I am not aware that any one has been able to demonstrate its existence, except by inference from the results of treatment by urethral stretching. If the cystitis be due to stone, cure it by removing the stone. If the result of a protracted labor, nitrate of silver, chlorate of potassa, borax, boracic acid, quinine, in solution, have been recommended, but I can but condemn the use of *nitrate of silver*, as being *too painful* and liable to aggravate the trouble. In any event, the bladder should be well washed out with warm water before any topical remedy is applied, and the addition of boracic acid in small quantity, or carbolic acid, or even common chloride of sodium, will cleanse the vesical lining of mucus, etc., so that the remedy will come into direct contact with the diseased surface. Quinine and extract of belladonna are valuable remedies, given in full doses, in the most acute stage. When it becomes more chronic, prolonged administration of the muriated tinct. of iron and liq. chlor. arsenici will be of great benefit. Infusion of *triticum repens* is much extolled, and Dr. Stover, of this city, recommends as invaluable the infusion of broomcorn seed ( $\frac{3}{4}$  ij. to O.i. of water).

If medication fail, much may be hoped from dilatation of the urethra, care being taken not to overstretch it, or incontinence of urine may succeed to the vesical trouble, and prove equally as unmanageable and distressing to the patient. Dilatation is employed upon the same theoretical principle as in anal fissure (Goodell). Constant drainage by a properly adapted catheter, as the Skene-Goodman, may give great relief, and even result in perfect cure.

All of these means failing, our last resource is an artificial vesico-vaginal fistula, as devised and recommended by Emmet. This is considered one of the most satisfactory operations in gynecology. Dr. Philander Harris has invented a fenestrated



staff and tenaculum for making the opening more readily (AMERICAN JOUR. OF OBST., March, '83, p. 271).

In conclusion, let me emphasize the assertion with which I started, namely, that these vesical troubles are only to be intelligently treated, by making in the outset the most thorough examination into all facts which may have any bearing on the diagnosis, that this being accurate and perfect in all respects, we may promptly and boldly administer such treatment as is best calculated to remove the cause of irritation, and crown the patient with the joy of a perfectly restored health.

206 E. GRACE STREET.

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#### RESTORATION OF AN EXTENSIVE PERINEO-RECTAL LACERATION OF THIRTY-TWO YEARS' STANDING.

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BY

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IN the early part of last winter, application was made to me to ascertain whether I would be willing to receive into my house for treatment a lady from a neighboring State, whose physical disabilities appeared to depend, mainly, upon an old rupture of the perineum. Finding that the patient was a confirmed morphia taker, I declined having anything to do with her case, unless she would come with a full purpose of having this habit entirely broken up, before any surgical measures for her cure should be undertaken. Learning this to be the *sine qua non*, she finally consented, and arrived as a patient on January 27th, 1882.

Mrs. —, white, native of America, aged fifty-eight years, a widow; of medium size, spare, and a good deal broken in health, presented upon examination the following conditions and appearances. External genitalia normal in appearance with the exception that the parts were unusually small. On separating the labia, the genital fissure was seen to extend backward into the anus; besides which, the rectum had been torn, upward for nearly three inches. The orifice of the urethra was discovered, not in its normal position, but back behind the arch of the pubes; making the use of the catheter difficult, and directing the stream of urine, when passed naturally, into the vagina. Her uterus and bladder were prolapsed; she urinated frequently; was subject to cystitis and attacks of diarrhea; and there were ulcerations of the cervix from which came an irritating discharge that produced ex-

coriations of the parts with which it came in contact. Notwithstanding the extent of the laceration, the vagino-rectal passage was of small calibre, and at once revealed, by the absence of working space, what was subsequently verified as the chief difficulty in the operation of perineorrhaphy in her case.

The laceration of the perineum and rectum resulted from the birth of a fetus, now a woman of thirty-two, and nothing had been done to remedy the accident, as her physician assured her that she could not be cured, and that an operation would be dangerous. It cannot be ascertained now, whether or not the whole extent of the rectal rent was the result of this special labor, but it is known that, after this birth, she lost the control of the bowels, and her rectum no longer acted as it should, in retaining the fecal matter, and finally expelling it under the will. After this labor, which was her second, the first having been a miscarriage in the six month, she gave birth to five children, four of whom are still living.

After the laceration occurred, she was obliged to remain at home, with a vessel always near at hand, on account of the frequent escape of fecal matter, and to resort frequently to the use of the syringe, to secure cleanliness. To diminish the activity of her bowels, she began, some twenty years ago, to resort to the use of paregoric, or some other form of opium, and the habit of taking this drug gradually grew upon her until about eleven years ago, when she became a regular morphia taker. Her measure had been for several years limited to two grains a day, as those who managed the affairs of the household prevented her from having access to any more. She had tried on several occasions to break up the habit, but was attacked directly with diarrhea, and forced to resume it.

Under my care, her morphia was gradually reduced; she was placed upon the use of the fluid extract of coca as a substitute; her diet was carefully regulated; she improved in health and spirits; the resulting diarrhea ceased, and in two months the habit was entirely broken up. While under this reformatory management, she was also being prepared for the operation in contemplation, by local treatment to the vagina and cervix, uterine support, etc. By the time of the operation, she was much improved in health by reason of the entire removal of her morphia, and the generous diet with tonics, under which she had been placed.

It was decided, in consultation, to attempt the healing of the entire rent by one operation, and to secure this, by closing the rectal portion with gut-snood stitches, and the sphincter muscle with silver wire; covering in several of the former when the perineum proper should be closed up. I secured a hank of snooding from a well-known manufacturer of fishing tackle, and having soaked it a sufficient length of time in carbolized water, found it quite pliable and very satisfactory.

The operation was performed under ether, on April 26th, 1882, at 11 A.M. assisted by Drs. Hannah Croasdale and Marie B. Wer-

ner. The parts were well denuded, and the edges of the rectum secured in apposition, by thirteen interrupted sutures of fishing-gut, the last being at the junction of skin and mucous membrane, after which the edges of the sphincter were brought together by a silver wire fastened with shot and a few silk sutures; no vessels were secured, and there was but little blood lost. After the operation, the vagina was dressed with mariner's lint as an absorbent; her extremities bandaged together, and the lateral decubitus directed. In consequence of the contracted state of the rectum and its sphincter, and the old habits of the patient, it was thought advisable to keep the bowels inactive for several days, and for this purpose she was kept under the influence of opium, which had the additional effect of quieting her nervous system; and for this purpose a half-grain pill administered from one to five times a day was found to be sufficient. She was placed upon liquid diet in the form of milk, meat broths, etc., and her urine was drawn at short intervals by a flexible catheter to satisfy a desire largely the result of habit. The lint was removed on the second day, and the vagina was syringed, to secure cleanliness, three times a day with dilute carbolic acid, fl. 3 i. to a pint of warm water. Her highest pulse was 96, and temperature 101° Fahr.

May 1st (fifth day). As the shot upon it was becoming buried, the wire suture was removed; sphincter and rectum found united; the muscle grasped the finger when introduced, and retained gas, which escaped naturally.

May 6th (tenth day). The patient began to feel uncomfortable, and was very impatient to have her bowels moved. Gave an enema, tincture of ox-gall fl.  $\frac{3}{4}$  i. to O.i. warm water, while upon her left side, which was retained for half an hour, and then brought away some small, hard lumps with liquid fecal matter. Administered another enema on the next day, but without effect.

May 8th (twelfth day), at 4 o'clock A.M. Patient very uneasy, and must have a motion; the nurse gave an enema, and almost before she could remove the tube (contrary to orders which were that she must wait one hour, and then use a bed-pan, making no straining effort), she got upon the chamber, and used her finger to mash the lumps and force them out. The result of this insane freak was the re-opening of the original laceration to within about two inches of its former limit in the rectum, and the loss of about a pint of blood. She was, of course, prostrated and alarmed at the effect of her own act, and began to make excuses, and deny the extent of her manual interference; but the mischief was done, and it remained to prepare the woman for another attempt. Owing to the acquired habits of the patient and the shock to her system, it was not thought advisable to attempt an immediate closure of the laceration, but to wait until she had recovered strength, and then operate as before, taking care to keep her bowels soluble, so that she could not force open the wound by defecation, or have any excuse for uneasiness about not having a passage. Besides, there were still some caseous accumulations from the use of milk to come away, before it would be at all safe,



with what experience has taught us we were to contend, to shut the sphincter. She was, therefore, put upon nutritious, ordinary diet, and the raw surfaces permitted to granulate and heal over.

May 20th, 1882. After the patient had received instructions that she was not to get upon her elbows, which she had done on the ninth and tenth days, with the effect of feeling pain in the region of the sutures, and that she must submit to being turned in bed by the nurse, as the least exercise gave her pain in the wound, the operation was repeated, with the aid of the same assistants and three students of medicine. The new tissue was found very tender and vascular, and could only be removed by clipping, causing a much greater loss of blood than in the first operation, one arteriole requiring compression.

The rectum was closed as before; then a silver stitch was taken through the sphincter on one side, from the point of the posterior commissure of the vulva back to the rectum, then across to the other side of the laceration, avoiding the anal opening, and forward through the belly of the sphincter to the posterior commissural limit on the side opposite the point of initial entrance, thus making the circular stitch of Emmet. This was secured by twisting at the commissure. The perineal portion of the laceration was then brought together with silver wires passed through the tissues deeply, and superficial sutures of silk. Three silver sutures were used, and were secured with shot, after being passed through perforated ivory bars, on either side. In order to keep the parts at rest, the sphincter was severed posteriorly.

As already mentioned, the after-treatment was altered decidedly as to one point, so as to avoid the risk of the passage of hardened fecal lumps through the rectum. No milk was allowed the patient, and her bowels were moved every day upon her side. Flax-seed mucilage was given to allay the irritation of her bladder, and but very little opium. Her urine was drawn as often as she desired, which was sometimes done to pacify her after an interval of less than one-half hour. She had not been in the habit of retaining this fluid any length of time, and we feared trouble, from our former experience, with her evacuations. As an additional security against accident, I administered in person all her enemata and vaginal washes. Her pulse, at its maximum, was 96, and temperature 101° Fahr.

May 21st (day after second operation), commenced to give fl.  $\frac{3}{4}$  ij. of sweet oil by enema daily.

May 23d (third day). The nurse used the catheter, and then went out for half an hour, leaving with the patient the daughter whose birth occasioned the laceration, thirty-two years before. The mother insisted that her urine should be drawn again; the daughter protested against it, but finally yielded to the orders of her mother, and attempted to use the catheter; but not understanding the operation, and being very astigmatic, she set the point of the instrument against the perineum and pushed it into

the wound. Her mother urged haste, and she pushed the catheter through by the belly of the sphincter ani into the vagina. Blood flowed freely, and no further mischief was attempted.

May 24th. There being no satisfactory evacuation, injected per rectum fl.  $\frac{3}{4}$  iv. of tincture of ox-gall in a pint of warm water, which brought away a few small lumps. Then a fourth of a bottle of solution of citrate of magnesia was administered, and she had three small fluid evacuations. 7 P.M. Removed the bars and three deep stitches, and loosened the circular stitch, as the sutures, in spite of constant watchfulness and packing of lint around the bars, were cutting into the tissues.

May 25th (fifth day). Removed to the circular suture of Emmet.

May 27th (seventh day). Although warned repeatedly against touching herself in the region of the operation, she seemed to have a mania for doing this very thing, which arose partly from old habit, and partly from a disregard of the consequences. She would separate the nates to permit the escape of wind, thus pulling upon the superficial stitches, and wipe her external parts with pieces of muslin which she tore from the sheets placed under her hips for protection. The result of this annoying propensity was the tearing loose of the perineal stitches, and the production of a triangular gap, an inch in length. I have been gynecologist to a large insane hospital, and feel for those whose minds are deranged, but this patient had no such excuse to plead. This third laceration of her perineum reached to within a third of an inch of the anus, and passed up in front of the rectum  $1\frac{1}{2}$  inches in depth, ending in the vagina. It was made at first by the passage of the catheter, and then increased in the outer portion by the handling mentioned. Fortunately, there was no connection with the rectum, and the sphincter muscle still closed the anus. By treating this wound so as to cause it to heal by granulation, I so far succeeded that the parts were all closed by the 16th of June (when the patient went home), with the exception of a small fistulous opening, about one-eighth of an inch in diameter, which was made by the catheter, and promised to contract still more, if not to close eventually. She had entire control of her sphincter-ani muscle, and no desire for morphia.

It is difficult to determine how much of the conduct of this patient was due to the influence of custom, how much to the opium habit, and how much to a natural impatience under suffering. She was accustomed to urinate at short intervals, getting up four or five times a night; to defecate by driblets, several times a day; and to give orders rather than obey them. When all this was changed, she worried about her bowels and bladder and was very restive under the restraints put upon her. She wanted to have her own way, and she took it several times, to her own injury. But for her own acts, she would have been

entirely cured by the first operation. From the fact that the first relaceration took place on the twelfth day, we are to exercise caution in moving the bowels, even after the parts are united, as the forced tissues may give way, while the united parts are still tender and weak.

My own experience in this class of operations inclines me to the opinion that it is safer to keep the bowels regular, with soft or fluid passages, than to confine them, and at a given time have them opened, after an accumulation of hardened fecal matter has taken place. I cannot see why union is endangered any more by the passage of fluid feces through the anus than by the distention of the sphincter at a later period in the effort to overcome a constipation. I was advised to keep the rectum in a quiescent state after the second operation, as I had done after the first, but am now satisfied that I took the recommendation of another gynecologist who proposed quite the opposite. Had I known the danger to be apprehended from the patient's anxiety about her evacuations, I should have decided to keep her bowels in action after the first operation, which, it is plain now, would have secured an early cure.

The operation itself was more than usually difficult, as, notwithstanding the fact that the vagina and rectum were thrown into one passage, the whole would barely admit a medium-sized speculum, and was entirely filled by the smaller end of that of Dr. Marion Sims. The rectum appeared to be contracted for want of its normal use, and the vagina must have been originally very small; the perineum was very short, so much so that a closure of the usual length of an inch and a half would have left a very small vaginal orifice. The original laceration was, no doubt, due to the small size of the vulvar outlet, and it is not probable that the parts could have been maintained in their integrity during her child-bearing life by an early operation. The cervix bore no evidences of having been torn in any of her labors, and therefore did not partake with the vagina in its abnormal conformation. It is fortunate for her now that her vagina is narrow, as the restoration of it will, in all probability, secure her, in the future, from uterine displacement. The position of her *meatus urinarius* I believe to be congenital, as there did not appear to have been any loss of tissue. Any attempt to bring forward the orifice from behind



the pubic arch gave pain. It had the appearance of being drawn up to its abnormal position. In operating, we had to depend upon a pair of wire retractors (which were specially made for the case) to keep open the parts during the processes of denudation and suturing. I am under many obligations to Dr. Robert P. Harris, for his advice in this perplexing case.

FEBRUARY, 1883.

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NOTE ON DR. J. LEWIS SMITH'S CASE OF "REMITTENT FEVER AFTER PARTURITION."<sup>1</sup>

BY

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Philadelphia.

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No one can have a higher opinion of Dr. Smith, as an earnest searcher after truth, than myself, yet, so disastrous do I consider the doctrine inculcated by his article, that I feel bound to submit the following remarks:

1. The evidence fails to show that the case was of malarial origin. It presented all the symptoms of septicemia, except fetor of the lochia, and this was prevented by the use of carbolyzed vaginal injections. The preliminary conditions (inertia, hemorrhage, and laceration), the insidious onset, the marked and irregular remissions and exacerbations, the failure of quinia, and the fatal termination, seem conclusive evidence of the truth of this theory.

2. It is an invidious task to criticise treatment, yet one cannot but feel that some very important omissions occurred in this case. First, the removal of the placenta by the old method, instead of expressing it by the promotion of firm uterine contraction. Second, the omission of exploration of the uterine cavity by the carbolyzed finger or hand. If such exploration had been made, I believe the uterine cavity would have been found filled with (at least two ounces of) fetid, tarry matter, and coagula. After the complete removal of these, a tube should have been passed to the uterine fundus, and free irrigation with hot carbolyzed water practised.

I have treated at least twelve similar cases in this manner.

<sup>1</sup> See Feb. No. of this JOURNAL, p. 154.

All have recovered, and with a rapidity entirely commensurate with the greater or less promptitude with which the treatment was commenced. In some cases, several irrigations were practised, but this was generally when the patient had been neglected in the beginning of the process of blood-poisoning.

Subjoined is a brief account of one of these cases :

The wife of Dr. W. N. was confined at 5 A.M., March 25th, 1883. During the first stage chloral, one drachm, in divided doses, was given, but without effect. After delivery, inertia was noted. The placenta was forcibly expressed, without waiting for uterine contraction, and ergot administered. The next day slight fetor of the discharge was noted, and, also, that it consisted of an unusual quantity of clear, red blood. Copious carbolyzed vaginal injections were used. On the second, third, fourth and fifth days, the temperature varied from 99.5° to 102.5°. Occasional chilliness was noted. On the afternoon of the sixth day, an extremely violent chill occurred, the temperature rose to 105.5, and the pulse to 140.

The uterus was pressed towards the vulva with one hand, and the index finger of the other passed along the internal surface of the symphysis pubis, and into the uterus, the cavity of which was greatly dilated, although, to the external hand, the uterus seemed firmly contracted. Some firm coagula and semi-fluid matter were felt. To evacuate these, it was found necessary to introduce the hand into the vagina. Then, the organ being still pressed down by the hand externally, two fingers were passed into the uterus, and the firmly-attached clots peeled off, and ejected, together with about three ounces of extremely fetid, tar-like matter. It was found more difficult to clear the cornua than the body of the uterus. The longest nozzle of Davidson's syringe (previously well curved) was now passed to the fundus by the right hand, the left index finger, passed through the internal os, serving as a guide. One gallon of one per-cent-solution of carbolic acid, at a temperature of 105°-110°, was injected. The next morning the temperature was normal, and there was no more trouble.

I confess that I made several errors in this case—(1) the use of chloral, which, I believe, promotes inertia; (2) the too speedy removal of the placenta, without securing firm uterine contraction; (3) the use of an old and inefficient preparation of ergot; and (4) delay in commencing efficient treatment.

In conclusion, I earnestly beg the reader, before adopting the view that such cases are malarial, to read what Playfair has to say; and, if he still hesitates, to give his patient the benefit of the doubt by thoroughly emptying and cleaning the uterine cavity.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

*Meeting, February 20th, 1883.*

### LARGE FIBROID TUMOR OF THE UTERUS UNACCOMPANIED BY SYMPTOMS.

DR. B. F. DAWSON mentioned the case of a lady, thirty-two years of age, who recently consulted him, by the advice of Dr. J. H. Menneu, with regard to an enlargement in the abdomen that had attracted the notice of her friends only a few weeks previously. The patient was in excellent health, and had suffered no pain whatever; menstruation was perfectly normal. On examination, Dr. Dawson found a large multiple fibroid tumor of the uterus, occupying nearly the entire pelvic cavity, and pressing so tightly against the pubes that it was almost impossible to introduce the finger between. The case was somewhat unique, in that the patient had been carrying a tumor of such large size without suffering any symptoms and in entire ignorance of its presence. Dr. Lee had seen the case with him.

DR. LEE confirmed the statements made by Dr. Dawson with regard to this case, and stated that the probable explanation of the absence of symptoms was that the growth must have originated in the fundus, and developed upwards and in directions not to cause such pressure upon the pelvic organs as would give rise to pain or other symptoms. By the time it had increased sufficiently in size and weight to occupy the pelvic cavity so fully as it did at present, the neighboring organs had become tolerant of its presence. He thought the case was an instructive one to gynecologists, in warning them against indiscriminately urging interference in cases of uterine growths, a tendency which, in the light of the brilliant success attending Battey's, Hegar, and Tait's operations for the removal of the uterine appendages in cases of solid tumors of the uterus, was liable to occur for the next few years.

DR. BACHE MCE. EMMET replied to a question by Dr. Dawson with regard to what circumstances would justify an operation for the removal of such a tumor, that, in his opinion, an operation would not be justifiable except the patient's life was being rendered miserable and was jeopardized by the presence of the tumor.

### DERMOID CYST OF BOTH OVARIES, AND CYSTIC TUMOR OF THE BROAD LIGAMENT.

DR. W. T. LUSK presented two dermoid cysts, one of which had occupied the right and the other the left ovary, and also an unpunctured cyst of the right broad ligament, all removed from the same patient about two months ago. The patient made an excellent recovery.

DR. GILLETTE stated that he could almost duplicate the specimen in one of its features. He had recently removed a cyst of the broad



ligament in a girl about fourteen years old, when just such a cyst as the one shown was in progress of formation. It was secondary to the main cyst. The patient recovered.

In reply to a question by Dr. Lee, DR. H. D. NICOLL said that Dr. Thomas had operated on one patient with dermoid cyst of either ovary.

DR. EMMET remarked that two years ago he reported a case of dermoid cyst of both ovaries.

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## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

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### SECTION IN OBSTETRICS.

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*Stated Meeting, April 26th, 1883.*

DR. R. TAUSZKY read a paper entitled

HOW TO SECURE THE BEST POSSIBLE PHYSICAL CONDITION AFTER  
PARTURITION.

The author of the paper began with the question, Why is it that almost every woman, as soon as she becomes a mother, begins to suffer from some form of pelvic disease? In support of the words "almost every woman," he referred to the very large percentage of gynecological cases in which the morbid condition present could be traced directly to childbirth, and then asked the significant question, By what means can the occurrence of these conditions be prevented? To the influence of the old term "meddlesome midwifery," he believed that a part of the explanation could be traced; but he regarded meddlesome midwifery, scientifically applied, as one of the most effectual means of preventing the conditions under consideration. Hygienic and antiseptic midwifery, under intelligent direction, even though it be subjected to the term "meddlesome," should be practised in every case of normal labor. Although at the present time it is so practised by most surgeons, it is not, unfortunately, carried out to an equal extent by obstetricians. How is this method to be carried out in cases of normal labor? First of all, the accoucheur should be careful to cleanse his hands with soap and water, remove all foreign particles from beneath the nails, and then wash the hands in either a three-per-cent solution of carbolic acid, or, what is probably more available, pure vinegar, and afterwards oil the hands with carbolized oil of the same strength of carbolic acid mentioned. All instruments and articles used about the woman should be cleansed and disinfected by similar means. Just prior to confinement, or early in the first stage of

labor, the bowels should be freely moved by an enema, repeated if necessary. The bladder should be emptied, and if catheterization is necessary, the urine should be drawn with a soft Nelaton catheter which has been thoroughly cleansed in boiling water and afterwards disinfected. The vulva should be bathed with some antiseptic solution, such as a very weak solution of carbolic acid, perhaps with the addition of a small quantity of glycerin, or with a solution of thymol.

¶The author recommended careful dilatation of the cervix with the fingers. He also spoke of the advantage which might accrue from gently pushing up the anterior lip of the cervix above the symphysis. Tough membranes also may be ruptured with great advantage. He recommended the use of chloroform, especially in primiparæ, not carrying the anæsthetic, however, to the production of full unconsciousness. The forceps, in very many cases, if judiciously used, were advantageous rather than disadvantageous, and should be used rather than to allow the head or shoulders to press unduly, for any considerable length of time, upon the perineum.

The cord should not be tied until the umbilical vessels cease to beat. Dr. Tauszky regarded this as a point of practical importance. He also recommended Credé's method of expression of the placenta. The genital passages should be carefully examined after removal of the placenta, and all slight lacerations or wounds should be closed, the same rules adopted as in the treatment of wounds of soft parts elsewhere, and they should be carefully covered with some antiseptic dressing, such as the application of iodoform, etc. He recommended the use of the abdominal binder. He claimed that the child should be applied to the breasts at the earliest moment, believing that the material which it derived in this way from the mother was more beneficial to it than any article which could be administered; at the same time it was beneficial to the mother in exciting or maintaining uterine contraction. In multiparæ he recommended the administration of a drachm of ergot after the delivery of the placenta. He believed that ergot in a normal labor should never be given before the expulsion of the child. According to his experience, after-pains, when the case was managed according to the plan outlined above, scarcely ever occurred. Should they occur, of course they should be controlled by the use of anodynes.

In the management of the puerperal condition, careful disinfection should be strictly observed. The thermometer should be used twice daily in the axilla. The breasts and the nipples should receive careful attention. He recommended the following as an application for excoriated nipples:

R Balsam Peru .....	gm. iv.
Olei amygdal .....	gm. vi.
Aquæ rosæ .....	gm. xxxv.
Mucil. acac. ....	gm. vi.

Mix, and apply after each nursing, the nipples being carefully cleansed.

Dr. Tauszky laid special stress upon the occurrence of hemorrhage after parturition, and remarked that a little hemorrhage after parturition is very dangerous, and should be arrested. He took the strong position that the accoucheur should be regarded as guilty of malpractice who would permit a slight quantity of blood to escape from the genital organs of a woman for days after parturition. He maintained that not a single drop of blood should appear after the completion of the third stage of labor; that the napkins when removed should be perfectly free from color; that should they be colored, the physician should at once institute an examination with reference to the source from whence the blood came, and set about arresting it.

The bowels need not be moved until the third day after labor. It is not necessary, is often dangerous, is even fatal sometimes, to use intrauterine carbolyzed injections once or twice daily up to the second day, even after natural labor. He believed that such injections should be used only when the lochia are offensive, and febrile movement has developed. When the lochia are offensive, and there is some fever present, he invariably syringes the vagina several times a day with a disinfectant solution, but intrauterine injections post partum are necessary only in cases of internal violence, such as sometimes attends the manual separation of the placenta or the use of the forceps. When such injections are used, he preferred thymol or simple water to carbolyzed water, which could be introduced either through a soft catheter or the exceedingly convenient tube invented by Dr. Chamberlain. The injections might be repeated until the fetor of the lochia was either markedly diminished or entirely corrected.

Dr. Tauszky protested against the teachings of Dr. Goodell, of Philadelphia, with reference to the parturient woman being permitted to assume the upright position within three days after labor. He believed that the doctrine was a dangerous one, and unwarranted, and maintained that the recumbent posture should be kept, changing occasionally from side to side for at least eight days after normal delivery, and especially until the uterus has returned to the pelvic cavity. Dr. Tauszky then referred to his experience on the frontier, while in the army, and stated that it was not only among the civilized, but also among the savages, that women suffer from diseases peculiar to their sex, and stated that gynecological affections among the squaws were not at all uncommon. He attributed a large percentage of these conditions to early rising after parturition. He then detailed the history of a case which terminated fatally, and, as he believed, chiefly because of the early getting up of the patient.

For pelvic peritonitis, in case it developed, he regarded cold applications as the best that could be employed, but more especially in the early inflammatory stages. Both the pain and the hyperemia were lessened by the use of cold. At first, the applications must be repeated very frequently.



Dr. Tauszky then exhibited some of Leiter's (of Vienna) devices for reducing intrapelvic temperature, which consisted in metallic cylinders three-quarters of an inch to an inch and a quarter in diameter and two inches in length, within which were coils which terminated in two extremities that projected from the extremity of the metallic bulb, and to which India-rubber tubes could be attached that conducted the water from a fountain above through the bulb into a basin below. He also exhibited a small device of the same kind which could be used for the application of cold to the cervical or intrauterine canal.

After fever has disappeared, warm baths or sitz baths could be resorted to, but he believed that the use of warm injections for peritonitis is dangerous.

Discussion of Dr. Tauszky's paper was opened by Dr. W. M. CHAMBERLAIN, who said he agreed entirely with the author of the paper in the idea of observing scrupulous cleanliness in the management of cases of labor. One statement made by Dr. Tauszky, however, struck him as a remarkable one, and one to which he could not subscribe; that is, that the attendant should not be content with himself or his patient, and should not leave her so long as there was any hemorrhagic flow from the vagina. Certainly that conflicted with his own experience and his ideas upon the subject. He expected always hemorrhage, slight, it is true, but an intermittent flow of blood for from twenty-four to thirty-six hours after labor, and had not been concerned if it passed beyond that measure. He had never recognized when proper cleansing of the vagina had been employed that this slight amount of hemorrhage had been productive of any harm. He thought it was natural, almost necessary, and should not be interfered with except to prevent it from becoming excessive.

With regard to the dangers of septicemia, he had read, as probably most had, the paper of Dr. Thomas detailing some striking cases of septicemia in which remarkable results had been obtained from washing out the puerperal uterus. Other writers also had related somewhat similar cases. The idea involved in Dr. Thomas' paper seemed to be that puerperal septicemia means retention of morbid matter or the formation of morbid matter within the cavity of the uterus, and that this is the essential cause of puerperal septicemia. Doubtless it is a very frequent, probably the most frequent cause, and in such cases the indication is to wash out the uterus if the cavity can be easily reached. But Dr. Chamberlain believed there were other causes which should be also recognized. For example, any breach of the surface anywhere in the length of the genital canal, occurring in labor, may allow the entrance of septic matters into the lymph and blood; also any surgical operation in the non-parturient patient may become like occasion of septicemia and peritonitis. He had certainly seen many cases of puerperal septicemia which could probably be assigned to lacerations of the perineum and vulva. If there were in addition retention of the secundines and development of morbid products in the cavity of the uterus, all the conditions of septic infection would be present.

As to intrauterine injections, he would show a specimen tube employed by himself and many others, and known as Chamberlain's tube. It should be, and generally had been, made of soft or

unannealed glass, which was not easily broken. It is eighteen inches long, seven-sixteenths of an inch in diameter, rounded and closed at the entering end, and perforated on all sides by counter sunk holes. To the other end, a siphon tube of India-rubber, connected with a two-quart wash-bottle, is attached. A one-per-cent solution of pure carbolic acid (Schering's is the best) was employed.

The tube could be passed without the aid of a guiding finger, and, he believed, greatly simplified irrigation of both uterus and vagina.

Care should be taken to leave no fluid remaining in the cavity of the pelvis.

The tube should be filled with water before it is introduced. Being rigid, the anterior lip of the uterus can be lifted with it, so as to permit the ready escape of the fluid from the cavity of the uterus while being injected. The perineum also can be pressed backwards considerably with it, thus allowing of the complete escape of the fluid from the hollow of the pelvis. It also gives opportunity for washing out the vagina before or after or without washing out the uterus.

Intrauterine injections practised upon every lying-in woman would probably be mischievous, and an unwarranted interference which nothing except a septic condition of the uterus would justify. The chief indication that a septic condition is present is the fetid condition of the lochia. The existence of septicemia is not an indication for washing out the uterus unless the cause can be located within the uterus. It may be an indication for washing out the vagina, but not the uterus. He had never attempted to introduce his tube and wash out the uterus after the organ had undergone advanced involution. He thought the case which Dr. Johnson cited at a recent meeting of the New York Academy of Medicine was one in which the uterus had ceased to be septic, and the occasion for the use of the instrument had passed away.

With regard to intravaginal irrigation for anti-febrile purposes, and the use of the cold coil to the abdomen, he had nothing special to say. He had already presented the subject to the Academy of Medicine about a year ago, and to the Medical Journal Association about eight years ago. It is probably not so strikingly efficient as Kibbee's cot, but its use is so simple and so efficient that it can be used with very great and positive advantage in all cases where Kibbee's cot could not be made available. The idea of *intravaginal* cooling also occurred to him at the same time, but he had not practised it. He believed, however, that it was legitimate, and possibly a very valuable extension of the same idea. With his preference for India-rubber over metallic substances, he should have continued to use a rubber coil, inasmuch as it may be difficult at times to secure the metallic tube, and the same idea could be accomplished with rubber tubing in an equally satisfactory manner.

DR. JEWETT, of Brooklyn, said he indorsed the idea already advanced by the author of the paper, and sustained by Dr. Chamberlain, that the first and most important element in the care of puerperal cases was cleanliness. To promote this end, it had been his practice to use the carbolized vaginal douche immediately after labor, using a two-and-a-half-per-cent solution immediately after the completion of the third stage of labor. From this practice he had seen no evil results. He also ordered the use of the vaginal douche every three or four hours for the first two or three days

after confinement. With regard to intrauterine injections, it had not been his practice to use them except where the vaginal douche had been tried and failed. He used the vaginal douche first, and if it did not immediately bring down the temperature, if evidence of septic infection were present, the intrauterine douche was then in order. Dr. Jewett was inclined to the opinion that, in the majority of cases, puerperal septicemia originates in wounds of the vagina and cervix. He thought, therefore, that the vaginal douche was usually sufficient. The objection to the frequent use of the intrauterine douche was the liability to produce some traumatism, or to open some new avenue for absorption. The results, however, obtained from well-observed clinical cases must ultimately decide concerning its use.

With regard to the matter of rest after delivery, it had been his practice to keep the patient quiet in bed from twelve to fourteen days, and although the woman might be then allowed to assume the upright position, he always counselled that she should remain quiet during the third week. He was inclined to agree with the writer of the paper concerning Dr. Goodell's views, and thought that if Dr. Goodell examined his patients a year after labor, he would find more or less evidence of the evils of the practice. Dr. Jewett believed it was important to secure the early and complete contraction of the uterus as soon as possible after the delivery of the child. In his practice, therefore, the third stage of labor rarely exceeded five to seven minutes, while most obstetric authorities advised that fifteen to twenty minutes, perhaps more, be allowed to elapse before delivery of the placenta and completion of the third stage of labor. He believed it to be important that the third stage of labor be completed as promptly and as thoroughly as possible by stimulating at once the natural powers of the uterus. He would not approve of any method which favored the formation of deep thrombi in the structure of the uterus. He favored expression of the placenta, believing that the essence of the manipulation was compression during contraction; that is, the process was merely supplementing the natural powers instead of replacing them.

Dr. BURRALL believed it to be a general principle, that the more perfect the woman's health was, when about to bear a child, the greater the probabilities were that she would accomplish her task with the greatest safety, and therefore it seemed that the care of the puerperal woman and the prevention of puerperal accidents should begin during pregnancy. Treatment of the puerperal woman preparatory to labor should begin several weeks before the expected confinement, and should be of such a character as to place the system in the best general condition possible. He thought the internal use of antiseptics before labor, perhaps for four, five, or six days, was reasonable. The functions of all the organs should be carefully examined, and such means taken as might be indicated to put them into the best possible condition. He also believed that the statement with regard to the proper use of the forceps during labor made by the author was judicious. External pressure and the use of ergot immediately after labor he believed to be proper to avert the hemorrhage. It had not been his practice to shorten the third stage of labor so much as had been mentioned by Dr. Jewett. He thought that sometimes more satisfactory results could be obtained by some delay than by the immediate completion of the third stage. He agreed with Dr. Chamberlain concerning the occurrence of a small amount of



hemorrhage after delivery, and in that respect differed with the author of the paper. He thought that a little more than the usual quantity of sanguinolent discharge after labor was not specially disadvantageous, but rather otherwise. The use of antiseptic injections and douches he believed to be indicated after delivery of the placenta. With regard to the application of ice to the abdomen and intrauterine injections, the necessity for their use usually arose at about the same time during the puerperal state; that is, upon the rise of temperature which is usually accompanied with a fetid lochial discharge. Under these circumstances, nothing produced more satisfactory results sometimes than the use of intrauterine injections.

DR. JEWETT referred to another point which he had omitted to mention; that is, the examination of the patient at the end of the third or fourth week after delivery, before she is discharged, with reference to possible lacerations of the soft parts or of the cervix which had occurred during labor and had been overlooked.

DR. BURRALL emphasized the point just made by Dr. Jewett. He also favored the use of the binder for two or three weeks after confinement. He also said that he could not indorse the views advocated by Dr. Goodell concerning the upright position, more especially for those whose uterine organs are weak and need support.

DR. BROWN remarked, concerning vaginal injections immediately after delivery, that it did not seem to him they were necessary in all cases. It did not seem that either the vagina or the uterus were necessarily in an unhealthy condition at this time, and that nature provides for some of these conditions by the escape of more or less blood from the genital passages. He did not believe that such discharges necessarily implied an unclean condition, and therefore that their arrest was essential. He disliked to disturb the patient for such a purpose. Further, he did not believe it was necessary to remain by the bedside of the patient until the hemorrhage had entirely ceased.

Dr. Brown then spoke of difficult labor possibly due to cicatricial formations succeeding manual removal of an adherent placenta and injury to the uterine walls.

With regard to antiseptics before labor, it did not occur to him that they should be administered or that either pregnancy or labor should be looked upon as necessarily a sickness. He therefore did not see the utility of beginning a course of disinfectant treatment before labor commences.

DR. CARPENTER asked Dr. Tauszky if he wished to be understood as saying that not a single drop of blood should be seen in the discharges after the completion of the third stage of labor.

DR. TAUSZKY replied that no bleeding whatever should take place after labor; that not one single drop of blood should be seen.

DR. JACOBUS asked Dr. Tauszky how long he was accustomed to remain with the woman after labor.

DR. TAUSZKY replied that sometimes not more than ten or fifteen minutes, sometimes longer. When the uterus was once firmly contracted, it had, according to his experience, remained in that condition, and hemorrhage did not occur.

DR. JACOBUS remarked that Dr. Tauszky's experience differed entirely from his own, and that, according to his observation, a certain amount of hemorrhage had invariably taken place after the completion of the third stage of labor, sufficient, at least, to give the napkins a greater or less blood-stained appearance. Further, he believed that this occurred in all cases.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Stated meeting, Thursday, May 3d, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. WM. GOODELL related the history of

THREE STUBBORN CASES OF VESICO-VAGINAL FISTULA SUCCESSFULLY  
TREATED AFTER THE OPERATION WITHOUT THE USE OF THE CAT-  
HETER.

The first one, after a non-instrumental labor lasting from a Tuesday evening, when the membranes broke, to a Friday night, found that her urine dribbled away immediately after the birth of the child. The fistula was situated so close to the cervix as to implicate it, and was quite large. Sixteen months after the accident, she was operated on by a distinguished surgeon, whose success in uro-genital fistulæ is very great. He turned the cervix into the bladder, and successfully closed up all the rent save a small portion of it. On this fistula, he operated three times without any union whatever. In each instance, the urine dribbled away before the stitches were removed, and on two occasions an alarming hemorrhage came *per vaginam*. This information Dr. Goodell obtained from the surgeon himself.

Early in 1877, Dr. Goodell operated on her at the Hospital of the University of Pennsylvania, and put in Sims' self-retaining catheter. Eight sutures were needed to close the opening. The next day, a hemorrhage from the bladder, possibly menstrual, took place, and lasted several days. A fever also set in, which gave some alarm. When the stitches were removed, very little union was found to have taken place. Four months later, Dr. Goodell operated for the second time, and, thinking that the vesical hemorrhage in the preceding operation was caused by the irritation of the self-retaining catheter, he treated her without one. The first twenty-four hours, her urine was drawn off every four hours, but afterwards she was allowed to pass it herself. No hemorrhage occurred, and perfect union took place.

The second case was also one of tedious labor in which the forceps were not used. The fistula at first was a very large one, and was most skilfully closed by an excellent surgeon. A very small fistula, however, remained at each angle of the wound. These defied repeated operations on his part, and the case finally drifted into Dr. Goodell's hands. Twice the latter operated at his private hospital on these fistulæ, using the Goodman self-retaining catheter, but each time vesical and uterine tenesmus set in, and the result was a failure. Both fistulæ were then burned with the actual cautery, and one of them closed up, but the larger one re-

sisted this treatment as well as that by nitric acid. He then operated upon it a month ago for the third time, dispensing with the use of the catheter. The lady was instructed to pass her water before the desire was urgent. Neither vesical nor uterine tenesmus occurred. The stitches were left in for fourteen days, and union was complete. The third case was the result of a short labor, and the cause of the fistula is obscure, as the lady was attended by a midwife, who pulled and tugged away at something after the birth of the child. The late Dr. H. Lenox Hodge had operated five times upon it, closing all but a small fistula which lay at the junction of the neck of the bladder with the urethra. Dr. Goodell closed this fistula at the Hospital of the University three weeks ago with eight stitches, and fearing that the catheter would interfere with union, dispensed wholly with it. The success was complete.

From these cases, and from others which he had met with, Dr. Goodell was led to think that the catheter might, as a source of irritation, often be dispensed with very advantageously in the treatment of these fistulæ. He cited the practice of the late Dr. Simon, of Heidelberg, who was a very successful operator, and yet rarely resorted to its use. He also called attention to the fact that in these cases, and in the very great majority of the cases he had met with, the forceps had not been resorted to, showing that it was not the use of that instrument, but its neglect or the delay in its use, that caused the mischief. In fact, he could not recall a case in which the lesion could be attributed to instrumental delivery. In the general experience of surgeons, very small vesico-vaginal fistulæ were harder to cure than moderate-sized ones. One reason for this is attributable to the fact that they usually are found in sites difficult to reach, another that the operator is unwilling to enlarge the small opening by bold incisions, and fails from too small a denuded surface. Including the one previously referred to, he had closed two of them by means of the actual cautery.

DR. ALBERT H. SMITH remarked that these cases were of great interest. He had been taken by surprise when Dr. Simon announced his plan of treatment without the catheter, as he had been afraid of the strain on the stitches resulting from the accumulation of urine in the bladder. The presence of the self-retaining catheter must necessarily be a source of irritation and vesical tenesmus. The small holes in its bulb may become occluded by mucus or clot, and then it would act as a plug instead of a drain. In those cases in which the loss of substance in the vesico-vaginal septum has been very great, and the mucous surface of the bladder has been prolapsed into the vagina, the capacity of the bladder becomes small, and it must be emptied frequently or the tension on the stitches becomes too great.

He had been gradually led to the conclusion that it would be better not to use the catheter after trachelorrhaphy and perineorrhaphy unless called for by special circumstances. There are cases in which, in consequence of mental influence or the effect of position, the patient cannot pass her water for weeks after labor, in which no injury or long or undue pressure has occurred.



DR. R. P. HARRIS had recently operated for the restoration of a very long perineum. The last stitch was almost on a line with the orifice of the urethra, and the nurse was not able to introduce the catheter. He placed the patient in a sitting position to pass her water, and used a male catheter tied on a tube of a Davidson syringe to wash out the vagina.

DR. GOODELL is by no means a convert to treatment in this class of cases without the employment of the catheter. He has been too successful with it. He prefers the Goodman self-retaining instrument, but he makes certain that it does not impinge on the wound. He has recognized the influence of mind and of position on the ability to pass water, and he thinks the use of ergot, so general before the third stage of labor, is one cause of the difficulty, as it is quite possible that it may cause a spasm of the urethral constricting fibres. He would like to dispense with the use of both catheter and syringe after perineorrhaphy, as he has found injuries to the anterior angle of the wound by the syringe and the fingers of the nurse while introducing the catheter. He has been in the habit of putting one stitch through the sound skin above the denuded surfaces to prevent this injury. In one case recently, the Goodman catheter slipped out twenty-four hours after perineorrhaphy, and he did not replace it, the wound healing. He always uses the catheter after trachelorrhaphy.

DR. WILLIAM GOODELL also exhibited

#### TWO OVARIAN TUMORS, ONE OF THEM OF DOUBTFUL CHARACTER.

The one of doubtful character was removed from an unmarried woman, aged twenty-seven, who had not menstruated for over a year. It was first discovered nine years ago, but gave no trouble until two and a half years ago, when ascites set in. She had been tapped fourteen times when Dr. G. first saw her. She was very thin, pale, and so weak as to keep her bed. He recognized a hard tumor floating in the ascitic fluid, giving the feeling of balottement, and diagnosticated it as either a solid ovarian tumor or a pedunculated fibroid.

On the 18th of last April, he removed it at the University Hospital, and found it to be a hard, solid nodular tumor of the right ovary with evidences of papillomatous degeneration. It had merely omental adhesions, and had a long, slender pedicle twisted many times on its axis. It was evident that the ascitic fluid was secreted directly from the tumor, and did not come from pressure on abdominal veins or from irritation of the peritoneum.

The other cyst was removed also at the hospital of the University, and on the same day, from a married woman, aged twenty-six, who noticed it two months after her marriage, and about four months ago. The cyst was as large as the adult head, and was apparently attached to the womb, which was drawn upwards, and gave a measurement of four inches. It was operated on early, because it caused great vesical disturbance. The lower portion of the cyst was found enveloped in the broad ligament, close up to the womb, and had to be enucleated. It was this condition that gave the symptoms of uterine attachment. The cyst

was that of the left ovary, but as the right ovary also presented tokens of degeneration, it was also removed. Both women recovered promptly, although the first one had on the third day a severe attack of mumps, which appears to be prevailing in this city as an epidemic. The ascitic fluid, which was straw-colored and syrupy, was not examined microscopically.

DR. M. O'HARA wished to know how Dr. Goodell could decide quickly between mumps and septic parotitis. He also spoke of the reflex action of the sexual organs as shown by the frequent occurrence of salivation during pregnancy. In a recent case of cancer of the rectum, the first symptom observed was excessive secretion of saliva.

DR. ALBERT SMITH remarked that mumps was a very interesting and very perplexing disease. He had seen cases of extension of the disease, without retrocession, in adult women to mastitis and ovaritis, the swelling of the parotid gland being rapidly followed by the involvement of the sexual glands, the inflammation of the ovaries being accompanied by local peritonitis. A singular question was raised by the case of a young man who went to Florida directly after marriage, and on the return trip by sea experienced a severe attack of mumps; it was complicated by orchitis, the inflammation being of high grade, with great increase of temperature and rapid pulse. No atrophy of the testicle has occurred, but the union has been sterile, and there is no known fault on the part of the wife. The semen has not been examined microscopically to ascertain the presence of spermatozooids. The mastitis accompanying mumps has never, in Dr. Smith's experience, run into suppuration, but is accompanied by febrile action of a high grade. He has seen the ovary the original point of attack, the inflammation of the mammary gland being later. It is a marvel of pathology that this disease, which affects in childhood the salivary glands only, should in adult life affect the sexual glands also. He has never seen a case of atrophy of the testicles following mumps.

DR. GOODELL recognized mumps in this case by his experience in two previous cases of mumps with severe symptoms in adults. The pulse does not become so frequent as in septicemia, and the eye remains clear and does not acquire that glassy appearance so indicative of a fatal issue. Dr. Goodell has never seen the involvement of the breast and ovary. A peculiar relation between the sexual organs and the glands of the neck is shown by the habit of the Roman matron who measured the throat of her daughter before and after the night after marriage to ascertain if the young husband had properly performed his marital duties and if they had been properly received.

DR. ALBERT H. SMITH exhibited a set of hard-rubber

#### URETHRAL DILATORS.

The set consists of ten pieces with two handles into which they can be screwed; the smallest bougie is twenty millimetres in circumference at the point and twenty-eight mm. at the largest part, the tapering in each bougie being eight mm. and a difference of six mm. between each one and the largest circumference of the next in the scale. The largest one is eighty-two mm. at the largest part, and would be useful as a rectal dilator. He had been very much

surprised at a statement made by Dr. Emmett at the last meeting of the Gynecological Society in Boston, that dilatation of the urethra almost universally causes laceration, and is followed by permanent incontinence of urine. Dr. Smith has been in the habit of doing it frequently and fearlessly, without hesitation, not only in disease of the urethra and bladder, but for exploratory purposes and for the removal of stone, as a step in the operation of anterior elytrorraphy, but also that by means of a finger in the bladder he may judge of the thickness of the walls in denuding the vaginal surface and place his sutures satisfactorily. He has never had incontinence of urine to last over twenty-four hours from this procedure.

DR. R. P. HARRIS had seen a large number of dilatations of the urethra without any bad effect. He would consider the method of Dr. Smith's better than any other plan, as it would make a perfectly even and uniform pressure on every portion of the urethra, with a very gradual action, free from the dangers incident to the opening of any form of instrument with blades.

DR. GOODELL was much obliged to Dr. Smith for exhibiting these instruments, and would get a set of them. He has entirely dropped Simon's dilators, and has for some time been using his little finger as the best dilator. He has not had any trouble from laceration or incontinence. In one case in which he resorted to dilatation and treatment to the mucous surface of the bladder as a cure for cystitis following labor, incontinence remained for a long time, but gradually disappeared. He knew of laceration and incontinence in two instances resulting from the use of the thumb as a dilator. Dilatation alone is a good treatment for many cases of irritable bladder.

DR. WM. H. PARISH narrated the case of a widow operated on by Dr. Goodell by dilatation for the relief of a very aggravated case of irritable bladder, the result of a gonorrhea contracted years before from her husband, and which had been followed by cystitis. It was greatly relieved for several months, but not cured, by dilatation, but the relief was only temporary. The patient passed under the care of Dr. H. Lenox Hodge, who cauterized the urethra by means of Paquelin's cautery. In consequence of the illness and death of Dr. Hodge, she came again under the care of Dr. Parish, who commenced treatment by the injection of a solution of nitrate of silver, very strong at first, but weaker on subsequent applications. The trouble has passed entirely away. There are two causes of fissure in dilatation: the first is too rapid expansion of the dilator; the second, changes in the mucous membrane, as from inflammatory action, particularly if caused by gonorrheal poison.

DR. CHARLES H. THOMAS had lately procured a set of nickel-steel instruments of about the same taper and for the same purposes as those exhibited by Dr. Smith. The set consisted of sixteen pieces; there were one and a half mm. as the scale, and each dilator tapered five mm. from the point to the largest circumference of the shank; they ranged from twenty-five to fifty mm. He has tried in some cases using every second instrument, making rises of three mm., but has found that the pain was increased by so doing. He has never known of a case of incontinence caused by dilatation, but has heard of such from the hands of two celebrated surgeons of this city. He thinks dilatation to the size of the finger a good



treatment for the relief of irritable bladder in connection with irritation of the urethra and neck of the bladder. He related the history of two cases in which this condition was complicated and made persistent by spasm of the sphincter ani muscle; dilatation of the urethra in these cases, although a benefit, did not cure the trouble, but when to this was added dilatation of the sphincter ani, so that two fingers could be introduced back to back and a good dilatation secured, the cases were permanently cured.

DR. B. F. BAER has practised dilatation of the female urethra a number of times and has had no instance of continued incontinence. He would, however, question the propriety of ever using a large-size dilator, except for the purpose of removing a calculus from the bladder, and even in that case he thought it might be better to allow the stone in the grasp of the forceps to finish the dilatation, than to use mechanical dilators to secure the full extent needed. In one instance, incontinence lasted several weeks after dilatation, but final recovery was complete, solutions of carbolic acid having been applied in the mean time for the cure of an irritability of the bladder and urethra.

DR. PARISH would like to hear from Dr. Smith respecting the indications for probable success in treatment by dilatation of the urethra for the relief of irritation of the bladder.

DR. SMITH, in reply to Dr. Baer, remarked that no cavity of the body should ever be dilated beyond the actual necessities of the case; such a principle is unquestionable; but no form of dilator could be worse than the irregularities and roughness of a calculus, increased in size as it would be by the grasping forceps, which would present but two points of contact with the urethra and render laceration quite probable. In a patient recently under his care he had reason to suspect the existence of papillomatous growths on the mucous surface of the bladder; he dilated the urethra, using the largest size of Simon's dilators and completing with a Molesworth dilator expanded very slowly. He was able to evert the bladder through the urethra, and removed the vegetations by means of scissors. There was no laceration nor incontinence resulting from this procedure. The danger is in too great haste. In reply to Dr. Parish, he said that dilatation is usually resorted to for exploratory purposes, removal of stone, growths on the vesical wall, or to ascertain the thickness of the wall of the bladder, and to introduce a finger into that viscus to guide the sutures in plastic operations upon the vagina. Irritability of the neck of the bladder can generally be relieved by dilatation, but it sometimes fails to cure. Dr. Smith prefers hard rubber to plated metal as the material for the dilators; it is lighter in weight, is not liable to corrosion, and is more easily kept clean. He thinks the multiplicity of instruments in Dr. Thomas' scale a disadvantage, and that time is lost and irritation caused by introducing several instruments in place of allowing one to remain a longer interval.

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## TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

*Stated Meeting, March 2d, 1883.*

DR. S. C. BUSEY, *President, in the Chair.*

### THE DISCUSSION ON PUERPERAL ECLAMPSIA

Was continued from the last meeting by DR. J. S. BEALE, who reported a case of coma at full term due to uremia. The patient, a primipara, twenty-eight years of age, came under Dr. Beale's care a few days before confinement. She was complaining of anomalous pains in the spine and abdomen, for which anodyne remedies were ordered. Then constipation became a troublesome symptom, and finally coma set in suddenly. Attention was then directed to the functions of the kidneys, and the urine was found to be highly albuminous. Labor commenced, and delivery shortly ensued, but the patient died eight hours later. Dr. Beale thought the patient might have been saved if she had been seen early enough to institute treatment directed to the condition of the kidneys.

DR. ASHFORD said, the principal points which he desired to have brought out in the discussion were those which had most bothered him in practice, and in illustration he would cite a case. Some four years ago, he was called to attend a lady in her third pregnancy, who, when first seen, was in her seventh or eighth month. Her previous history at once caused him great solicitude. During her first pregnancy, she had been very edematous, and had been treated by her father, a physician, who bled her several times, up to her confinement. Delivery was accompanied by convulsions, and the child was born dead. Her second pregnancy and labor were repetitions of her first. Her third gestation, when Dr. Ashford was called in, had similar results—convulsions and a dead child. In treating her, he aimed at decreasing the albuminuria and increasing the excretion of urine. There was at each period, when the menses would otherwise have appeared, an increase in the albumen, with scant urine and aggravation of the general symptoms. Her husband was instructed to watch her carefully, but did not report to him, because another physician boarding in the house had been giving her morphia for gastralgia (a significant fact). When sent for, Dr. A. found her in convulsions. He at once put her under ether, and proceeded to dilate the os, and upon the arrival of Dr. Busey, whom he had sent for, delivery was effected quite rapidly. The convulsions continued for some time after delivery, more severe during the first twenty-four hours, but less so during the day after. She finally recovered. At her next pregnancy, she had albuminuria and dropsy as early as the fifth month, together with head symptoms, consisting in the not unusual slight exhalation of spirits. She was cupped over the lumbar and dorsal regions, purged, took diaphoretics, benzoic acid, bromides, etc. There were blood-corpuscles in the urine, but not in quantity sufficient to account for the albumen present, amounting to one-half of the urine. Just before the severe symptoms set in (she had been cupped over the lumbar region), she passed two quarts of urine daily contain-

ing only traces of albumen. About the seventh menstrual molimen, the symptoms reappeared, and he found her with gastralgia, and ordered chloral hydrate. On the following morning she was worse—heavy, sleepy, and dull. He opened the bowels, had her cupped again, and, with the consent and assistance of Dr. Busey, induced premature labor, the patient being in convulsions at the time. Delivery was soon effected, but the convulsions continued, although not severe in form, chloroform often preventing their onset. He relied greatly on anesthetics and pilocarpine, the latter showing its good effects by causing sweating and salivation. This case showed that we could not always rely upon supposed causes to explain the phenomena present. Thus we see cases of albuminuria without convulsions, and still many cases of albuminuria had convulsions, *i. e.*, convulsions referred to uremic poisoning. He did not know that the convulsions were due to the retention of urea, for in the last instance mentioned there could not have been a sufficient amount of urea in the blood, because she passed two quarts of urine daily. Still, no quantitative analysis was made to determine the proportion of urea present. This gave color to the theory that the uterus acted reflexly upon the kidneys, and the question was whether there was hydremia, and in consequence effusion on the brain, or retention of urea leading to brain or nerve irritation. But, practically, this did not matter, for, in spite of theory, the usual treatment obtained. We must be ready to induce labor at once upon the appearance of nervous symptoms, no matter what poison caused the mischief. He did not agree with Tyler Smith, who said that in his practice no case had had convulsions, because he prevented them by treatment. In his case, there was no organic disease of the kidneys; the patient enjoyed good health when not pregnant, and at these periods passed a normal amount of normal urine. Part of our practice depended on the idea that we should relieve the kidneys. Thus, we induced labor to remove pressure, and we also removed the reflex influence of the pregnant uterus over the kidneys. By diaphoretics we caused determination to the skin, and thus relieved the kidneys, and we used purgatives for the same reason. It was a question whether the results were due merely to the removal of the blood serum. He held that the main point to be considered was the induction of premature labor. If the symptoms set in at the fifth month, it was, of course, desirable to postpone the induction of labor to the seventh month, because there was a chance to save the child; but when the convulsions came on, we should not hesitate at any period. He thought, if practitioners were clear upon this point, there would be less halting. He had seen objections raised by practitioners, and had seen time lost, and bad results following the delay. The other ready method was found in anesthetics, which removed the reflex influence of uterine contractions, and, inasmuch as it had been said that the pains of a premature labor were more likely to bring on convulsions than those occurring at term, ether and chloroform did away with this objection. In his experience, hot weather predisposed to puerperal eclampsia. He held that it was bad practice to send our patients away during hot weather, who were pregnant, as it was better to keep them under observation and treatment at home.

Dr. Ashford referred to another case of his where convulsions set in, several hours after labor. There had been no previous trouble about the kidneys, and urine was freely passed after labor. This patient died. What was the condition in this case? She had gone



through labor, the child had been born without trouble, and yet convulsions came on. There had been no edema, no disturbance of the mind, no nerve trouble previous to and during the parturition. It was doubtful whether, in this case, the convulsions were puerperal, inasmuch as the puerperal condition did not exert its influence until so long after the birth of the child, unless, indeed, there was engorgement of the vessels, after complete contraction of the uterus.

DR. TYLER cited a case reported by Rosenthal, where the convulsions occurred before, during, and after labor. After the usual remedies had been tried in vain, transfusion was resorted to, the injection being passed into the vein of one arm, while the patient was bled from the other. She recovered.

DR. ASHFORD supplemented his remarks by stating that his patient, when in a condition of lethargy, was cupped just before the convulsions began. He raised the question: Was it not best, after all, to bleed in all these cases? True, his patient was bled during her first pregnancy, and still had convulsions, but what was the after-effect of the bleeding?

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

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*Meeting, Wednesday, April 4th. 1883.*

DR. GERVIS, *President, in the Chair.*

### KNOTTING OF UMBILICAL CORD.

DR. GODSON exhibited a four months' fetus with placenta, showing a knot in the umbilical cord, with atrophy of the cord on either side of it, leading, he believed, to the death of the fetus.

### DERMOID CYST.

DR. EDIS exhibited a dermoid cyst removed by him. It was so extensively adherent that it was difficult to determine whence it had sprung. Both ovaries and broad ligaments were removed with it. The patient recovered.

### HERNIA OF A UTERINE FIBRO-MYOMA.

MR. KNOWSLEY THORNTON showed a uterine fibro-myxomatous tumor, weighing eleven and a half pounds removed by him. The abdomen had been opened some years previously, but the operator then, finding the tumor uterine, closed the wound; a hernia of the tumor resulted, it became adherent, ulcerated, and bled. Mr. Thornton removed it with the uterine appendages. The tumor was of the soft kind, and he thought might have been cured by removal of the uterine appendages; but it was impossible to close the wound without removing the uterus. He believed the case unique. The patient was doing well.

## AXIS-TRACTION VULSELLUM FORCEPS.

DR. ROBERT BARNES showed a sessile submucous fibro-myoma, and a new axis-traction vulsellum forceps which he had devised and used for its removal. By this instrument the tumor was dragged within reach without undue or misdirected force, and soon was left for manipulation in front. He thought this application of the principle of Tarnier's forceps would prove of great value.

DR. AVELING had invented and published forceps of the form permitting axis-traction ten years before Tarnier's forceps of the same form was made known.

DR. HEYWOOD SMITH suggested that this forceps would be better if the blades were made separable.

## CYST AND TUMOR OF PLACENTA.

MR. MARK (for Dr. John Williams) exhibited a placenta having on its fetal aspect a cyst the size of a Tangerine orange, at the base of which was a tumor, apparently fibrous, the size of an almond.

## ON THE "PRESSURE OF THE FEMORA" AND ITS INFLUENCE ON THE SHAPE OF THE PELVIS.

This paper by DR. CHAMPNEYS was then read. After a brief review of the history of pelvic literature, special mention was made of the study of the fetal pelvis by Fehling, which showed that many characters previously supposed to be the result of the operation of mechanical influences after birth, were really congenital and antecedent in date to the operation of such influences. The same applied to the rickety fetal pelvis. It followed from this that the scope of mechanical influences as hitherto accepted, had to be reconsidered. In considering the influence of the "pressure of the femora" fallacies were pointed out, and all possible sources for this pressure were reviewed. These included: 1. Passive resistances. (a) bones, (b) ligaments, (c) couples. 2. Active operations, (a) action of muscles. These were in turn scrutinized, and the conclusion reached that: "the action of the muscles joining the femur and the pelvis is a true cause of the 'inward pressure of the femora,' and is aided by the muscles favoring inversion of the foot." A corollary followed, "that use of the lower limbs will increase the 'inward pressure of the femora.'" In unsymmetrical pelvises, and pelvises in which the acetabula are within the line of the body-weight, other consequences followed. These were illustrated by three figures. The phrase "increased pressure on the overweighted side," was shown to include many different factors.

DR. ROBERT BARNES suggested that one factor in producing flattening of the rickety fetal pelvis might be pressure from the attitude of the fetus, with the thighs doubled up.

DR. MATTHEWS DUNCAN agreed with the paper in the main. Dr. Champneys had given a valuable sketch of the history of the subject, and his special study of the action of femora as a result of body-weight and muscular force made the paper a great contribu-

tion to pelvic literature. He (Dr. Duncan) would not give muscular action a paramount position, and for that still vindicated the great force of body-weight.

DR. AVELING drew attention to a pelvis in the Society's Museum, the shape of which was normal, although congenital dislocation of the hip was present.

MR. DORAN thought muscular action in the fetus was a force too slight and intermittent to be capable of altering the shape of cartilaginous bones.

DR. CHAMPNEYS agreed that gravity was the most powerful of the forces acting in the pelvis. Although the action of mechanics might have been pressed too far, it was impossible, in the face of the malacosteon pelvis, to upset it. He did not think that the fetal attitude was capable of flattening the fetal pelvis, for the fetus floated in fluid, and therefore was not exposed to any inequality of pressure; and its attitude was not for it one of constraint.

#### CASE OF LABOR WITH ATRESIA VAGINÆ.

This paper, by DR. FANCOURT BARNES, was then read. The patient was aged twenty-one years, pregnant for the first time. The vagina was represented by a cul-de-sac about one and a half inches deep, at the bottom of which was a pinhole aperture, the orifice of a canal of no larger dimensions, leading into the uterus. This canal traversed about two inches of tissue before reaching the uterine cavity. The patient was anesthetized, the canal stretched with a Priestley's dilator, then incised on each side with Simpson's metrotome, and still further enlarged by laceration with the finger. Delivery was then accomplished with Barnes' forceps, it being found impracticable to apply Tarnier's. The operation lasted an hour, and was performed under carbolic spray. Mother and child did well.

DR. EDIS confirmed Dr. Barnes' account of the case.

DR. HEYWOOD SMITH mentioned a case he had formerly brought before the Society.

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*Meeting, Wednesday, May 2d, 1883.*

DR. GERVIS, *President, in the Chair.*

#### EXTRAUTERINE FETATION.

DR. I. A. MANSELL-MOULLIN showed a specimen of abdominal gestation. The fetus, of about four months' development, was contained in a sac bounded by the Fallopian tube and broad ligament in front, and the intestines above and behind. In its primary stage he thought it had been probably tubo-ovarian. The patient died from internal hemorrhage from the placental site. The points of interest in the case were, 1st, that the patient had recovered from an attack of internal hemorrhage and peritonitis six weeks previously, and, 2d, that the intestines were so adherent over the cyst that, had its removal been attempted, it would have been impossible to complete the operation.

MR. LAWSON TAIT said that in such a case all that was wanted



was the removal of the fetus and drainage of the cyst. He regretted that this had not been done. He had operated on seven such cases, of which six had recovered.

DR. HEYWOOD SMITH said the patient was admitted in too low a state for operation, and the post-mortem showed that any operation would have failed.

DR. BRAXTON HICKS said that the treatment advocated by Mr. Tait was not new, and recorded cases showed that it was not so simple or so safe as had been said.

DR. EDIS thought operation was advisable when the diagnosis was clear, but the difficulty was in diagnosis. He agreed with Mr. Tait that an exploratory incision was justifiable when the symptoms were grave enough.

THE PRESIDENT remarked on the comparative safety conferred by antisepticism in peritoneal surgery. He thought that the condition of the patient rather than the presence of adhesions was the bar to operation in this case.

DR. CARTER said that the patient was in too low a state for operation, and, from the post-mortem, he thought it would have been unsuccessful.

#### CYSTIC DEGENERATION OF UTERINE FIBROID.

DR. CARTER showed a uterine fibroid which had undergone cystic degeneration. It grew from the fundus uteri by a pedicle one and one-half inches long and one-half inch in diameter. It derived its blood supply mainly from extensive adhesions. It weighed three and three-quarters pounds, and contained seven pints of fluid—in all weighing about thirteen pounds. The patient from whom he had removed it had done well.

#### CYSTIC DISEASE OF OVARIES.

DR. CARTER showed two ovaries removed from a patient and made up of a number of small cysts. They weighed one pound and twelve ounces respectively. They had been jammed down into the pelvis behind the uterus, and had been taken for uterine fibroids. The patient had done well.

MR. LAWSON TAIT said the ovarian disease was one of a very rare kind described by Rokitansky, Ritchie, and himself.

#### HYDROSALPINX.

MR. LAWSON TAIT showed a specimen of hydrosalpinx removed from a patient from whom four years previously an ovarian tumor had been removed.

#### PYOSALPINX.

MR. LAWSON TAIT also showed a specimen of pyosalpinx removed from a recently-married woman. The symptoms had followed marriage, and he thought the disease due to latent gonorrhea. He thought there must be hundreds of women in London suffering horribly from this disease, and that this operation was not done half often enough.

#### SUPPURATING PAROVARIAN CYST.

MR. LAWSON TAIT also showed a suppurating parovarian cyst

which he had with much difficulty enucleated. Each of the patients from whom the exhibited specimens were taken had done well.

DR. EDIS called attention to Dr. Noeggerath's paper on latent gonorrhea. He (Dr. Edis) thought such cases of frequent occurrence, and that operative treatment offered the only hope of relief.

DR. FANCOURT BARNES thought the results of Mr. Tait's operations justified their performance.

#### A CASE OF EXTRAUTERINE GESTATION SIMULATING SO-CALLED MISSED LABOR.

By DR. RASCH.—The patient, a multipara aged twenty-nine, ceased to menstruate in March, 1882. In August she thought that she quickened. In October she suffered from pain in the belly, fetal movements ceased, and there was some hemorrhage from the vagina. Then followed symptoms said to be due to inflammation of the kidneys and lungs. In December and January a foul vaginal discharge was noticed. At the end of January some fetal bones came away per vaginam. At this time a sound passed six inches into the uterus, and, on washing out the uterus, a pint and a half of fluid was injected into the organ before any returned. The patient died at the end of February. On autopsy, the fetus was found in a cyst occupying the lower belly, inseparably connected with the pelvic viscera and abdominal wall, and opening into the sigmoid flexure and the uterus, the latter organ being of normal size. The author remarked on the similarity of the phenomena during life—the history of the case, the distance to which the sound entered, and the quantity of fluid which the uterus apparently retained—to those of so-called missed labor. The autopsy showed that removal of the fetus by laparotomy would have been easy, and he regretted he had not done it.

MR. LAWSON TAIT said that the case emphasized the rule that in obscure cases of abdominal disease, not malignant, the abdomen should be opened.

DR. GALABIN had met with a case much resembling that of Dr. Rasch, except that the cyst did not open into the bowel. In this case the cervix was dilated with a tent, and then the opening between the cyst and the convexity of the retroflexed uterus could be felt with the finger, thus settling the diagnosis.

#### ON THE BEHAVIOR OF THE UTERUS IN PUERPERAL ECLAMPSIA AS OBSERVED IN TWO CASES.

By DR. BRAXTON HICKS, F.R.S.—The author remarked that the condition of the pregnant uterus during a series of epileptiform attacks had not been very closely observed, the general idea being that the uterus participated in the general excitement of the muscular system. Passages were quoted from different works on the subject in illustration of this. The author then described two cases in which he had carefully noticed the action of the uterus. In each of them, coincidently with a convulsion, a powerful and pro-

longed contraction of the uterus was observed. Between the convulsions the uterine action was natural. He could not state the exact relationship in point of time between the convulsions and uterine contraction. He did not think that uterine contraction alone caused the convulsion; for in the most severe cases of tonic or clonic contraction of the uterus, convulsions did not occur. But there might in these cases be increased excitability. It had been suggested that increased force of pains might result from carbonic acid intoxication due to the convulsions. He thought the immediate supervention of uterine contraction on the convulsive paroxysms and the quietness of uterine action between them, told against this view. The presence of these contractions, together with the disturbance of the heart and vascular system and the pupil, showed that the muscles of organic life were liberally affected during the paroxysms of eclampsia. These prolonged and powerful uterine contractions, as well as the carbonic acid poisoning of the mother's blood, were a source of danger to the fetus, and, in its interest, speedy delivery was called for, if it could be effected without harm to the mother.

DR. ROBERT BARNES regarded the paper as of extreme value. He did not doubt that the immediate cause of the uterine contraction was the convulsion. Dr. Hicks' observations would lead him to reconsider the rule which he had adopted, to reject the *accouchement forcé*, from which he had seen disastrous result. With chloroform and improved operative measures, delivery might be effected early and safely. But the mother must be considered first.

DR. GRAILY HEWITT thought Dr. Hicks' observations novel and important. He thought the disturbances of the abdominal and renal circulation caused by pressure of the gravid uterus on the renal veins exercised a powerful influence in producing eclampsia. He had found benefit from diminishing this pressure by positional treatment and by unloading the bowels.

DR. ROUTH had seen marvellous benefit in puerperal convulsions from placing the patient on her belly and knees—a confirmation of Dr. Hewitt's views.

DR. HICKS did not recommend force in the delivery of the child; as to the effect of pressure, there was often no albumen in the urine before the first convulsive seizure.

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## REVIEWS.

THE DISEASES OF WOMEN: A MANUAL FOR PHYSICIANS AND STUDENTS. By HEINRICH FRITSCH, M.D., Professor of Gynecology and Obstetrics at the University of Halle. Translated by ISIDOR FURST. With 159 wood engravings: pp. 346. New York: Wm. Wood & Co., 1883.

This work constitutes the March number of Wood's Library for the current year. A careful perusal leaves the impression that the publishers have made a judicious selection and conferred a boon on physicians and students by placing within their reach a manual so eminently on a par with the great advances which in late years have been made in gynecology, as also one which, on account of its comprehensiveness in small compass, will answer well for a text-book. The surgical procedures recommended are in general those adopted by the advanced operators in this country. To an American eye, the complicated leg-braces and equally complicated specula figured in the text appear superfluous. In plastic operations it is of great importance to the operator to have the parts freely movable at will. Two competent assistants, hence, each supporting a leg and intelligently separating the labia, with whatever force may be desired, certainly seem preferable to a fixed speculum, exerting uniform expansile force, to alter which time and patience are required for readjusting the instrument. One glaring fault in the work is the almost complete ignoring of the subject of laceration of the cervix. Why Continental works, as a rule, should contain little, if any, reference to a lesion of such—unfortunately—common occurrence in this country is inexplicable. That the same lesion exists abroad is unquestionable; that it is followed by the same effects abroad is rationally to be expected. Why, then, silence on the subject? It is no excuse to contend that the operation has been abused in America; it is verging on fatuity to simply condemn it as unnecessary; ignorance of the operation can hardly be claimed by any gynecologist worthy of the name. Both lesion and operation having become facts well established, the only possible inference is that where neither lesion nor operation are recognized, the perceptive faculty is either lacking or else refuses to be present.

In Chapters I. and II. is found a terse description of the anatomy and physiology of the organs of generation. Time is not wasted in the discussion of theory, but the facts are stated as, according to the latest researches, they appear warrantable. The student will find in these few pages all the information he strictly requires for the proper understanding of the changes which deviation from health may impress on the female pelvic organs. In some minor points Fritsch's anatomy is not quite up to the times. For instance, on page 2 the hymen is said to be a "duplication of the mucous membrane." This is not correct, Budin's researches having shown that the hymen is a structure similar to the vagina itself, not simply a duplication of its mucous membrane. Again, the vagina is defined as a "muscular tube which in its superior concavity nearly reproduces the curvature of the posterior pelvic wall." This definition, true enough, is according to rule, but late researches, as well as the knowledge derived from frozen sections, would seem to show

that the vagina, instead of a tube is a slit, with normally very little curve. Still further, while Fritsch may be correct, he is not in accord with anatomists generally in saying that the utero-sacral ligaments cannot be followed to the bone, but that the fibres simply radiating to the peritoneum, the uterus is in no sense attached to the sacrum.

The normal position of the uterus is stated to be one of slight anteflexion. This opinion was reached by careful examination of the living female, because "no cadaveric sections, with or without previous freezing, are ever able *alone* to give information regarding the position during life." Stress is laid on the importance of remembering that "the uterus *in toto* is displaceable in all directions, upward and downward; secondly, that it may be moved in such a manner that the upper longer arm of the lever, the body, imparts motion to the lower smaller arm, the cervix—in the opposite direction—and inversely the cervix to the body." There is no true "fastening by ligaments." "On the contrary, *that condition* is pathological in which the above-described ligaments become really tense. For, physiologically, all these ligaments are quite relaxed; they resist excesses of motion, but by no means do they hinder the just-related extensive physiological displacements upward and downward." "As long as the pressure from above and the resistance from below are physiologically in equilibrium, so long the uterus lies in normal position. The ligaments do not immediately enter into the consideration. But if, for instance, the pelvic floor relaxes, or the pressure becomes unilateral or excessive from above, the uterus will change its position and drag upon one of its ligaments." "Finally, it must not be forgotten that the position of an organ is also dependent on its form. If we place a sphere on an inclined plane it will roll down, but a cube will remain at rest. If the sphere be heavy, its intrinsic weight will favor the speed of its rolling. Thus the form and absolute gravity of the uterus will have some influence on its position." From these quotations a fair idea may be gained of the opinion held by Fritsch in regard to the uterus and its normal position. It helps us, also, to an understanding of the real truth that within certain limits the uterus may be considered to be in a normal position; that we are not by any means bound to call a greater or less degree of anteflexion or ante-curvature abnormal, even though no symptoms are present, simply because the position assumed is not strictly in accord with that arbitrarily laid down as normal by one or another authority. The great point to be borne in mind is this very mobility of the uterus, and hence it may justly be inferred that a normal position for one woman may be abnormal for another. *Position*, in connection with *symptom*, would seem, after all, to be the real guide to a diagnosis of abnormality. The increased zest with which latterly the study of the anatomy of the female sexual organs has been pursued, will, perhaps, soon set at rest that oft-repeated and variously-answered question, "What is the normal position of the uterus?"

Chapter III., on general diagnosis, is sufficiently complete and generally satisfactory. Fritsch is, however, in error in saying that in America the lateral position is preferred for digital examination. If he had written specular for digital, he would have been correct. American gynecologists, indeed, differ from European in just the reverse from what is stated in the text, the dorsal position being used for digital examination, the lateral for specular, whilst in Europe the dorsal is usually preferred in both cases. The value of the conjoined examination is recognized by this author, and the

uses of the uterine sound limited and rightly subordinated to other means of examination. The advantages of Sims' position are in a measure recognized, but its disadvantages, as here stated, can hardly be assented to. For instance, as a disadvantage, we are told that the combined examination cannot be made in this position. It has never been claimed as an advantage that the combined examination could be made in this position. Again, another disadvantage is that we cannot see the patient's face. This objection applies with still greater force to the dorsal position, where, when the speculum is in place, the operator must needs rise to see the patient's face, whilst in Sims' position he may usually accomplish this by looking over the woman's thighs. Thirdly, Sims' position "requires an assistant." Not necessarily, but if it did, the presence of an assistant, where such is possible, is always preferable. Fritsch, however, on account of the above "disadvantages," prefers Simon's specula. Of tents, the laminaria is advised over the sponge. Indeed, it is urgently recommended to discard the latter altogether, for the reason that infection frequently follows its use, in many cases leading to death. Where the tents accomplish insufficient dilatation, or are too slow in action, Fritsch has devised his graduated dilators. During their use, the vagina is to be irrigated with carbolized water. We are warned that even these dilators are not free from danger, and should never be employed unless the indication for their use is clear.

Chapter IV. points out in detail gynecological antiseptics. Nowadays the necessity for strict cleanliness is universally recognized, and that this can be obtained without resort to carbolic acid and other germicides, is sufficiently proved by the operative results of men who use only clean water, but that in sufficient amount. Without underestimating the utility of Lister's advocacy of carbolic, it holds true that to-day there is a reaction from the system he propounded. Fritsch, however, with the exception of the spray, insists on the use of carbolic to an extent which hardly seems necessary. The chapter, nevertheless, contains many valuable hints for those who desire to obtain strict Listerian antiseptics, and calls for respectful consideration, as containing honest opinions deduced from laudable efforts to lessen the dangers which may lurk behind any gynecological operation.

Chapter V. considers general therapeutics, and contains a very satisfactory account of methods of vaginal irrigation, the tamponade, the abstraction of blood, application of caustics, etc., etc. Under the tamponade, it is stated as best to carry the tampons up through a tubular speculum, though it may be done "equally well through a Sims' speculum." The latter method, or else the knee-chest position, is really the only effective way. As for caustics, Fritsch takes the right stand in advocating solutions alone. He strongly condemns the solid stick of silver, particularly the practice in favor with some of leaving a small piece in the uterine cavity.

With Chapter VI. the consideration of the diseases of the genital organs begins. First in order are the diseases of the vulva. A brief and condensed account is given of malformations, inflammations, new-formations, and lesions. In this chapter, as elsewhere, one is impressed by the accuracy of description and the omission of needless detail.

Chapters VII. to X., considering the vagina, urethra, and bladder, and uterine malformations, whilst brief, offer no ground for criticism. Where operative measures are indicated, those



recommended are the ordinary ones in general use. In chapter X. inflammation of the uterus is described. The division into acute and chronic metritis is made. The acute form only occurs when, during the puerperium or an operation, a septic element is introduced. The chronic form corresponds to the areolar hyperplasia of Thomas. Since, in this condition, there is no true inflammation, but only a hypertrophy of the cellular elements of the uterus, the term metritis is inaccurate, pathologically, and should not be used. The treatment advised is the ordinary one. A prime cause of many hyperplastic uteri—cervical laceration, not being recognized by Fritsch, a valuable means of effecting cure—the repair of the laceration—is not mentioned.

Chapter XI., devoted to disease of the endometrium, is very interesting. Much more space is given to the subject of erosion of the cervix than one usually finds in gynecological text-books. One form is obviously simply a laceration of the cervix, as will be seen by reference to page 176, fig. 90, representing the vaginal portion of the uterus, "both lips of which are covered with a fissured papillomatous erosion." Such a condition requires amputation, in Fritsch's opinion. Many years ago, the same condition was amputated in America, but to day Emmet's operation is substituted. On page 178 will be found the only reference to this operation, as follows: "Should there be a laceration in the vaginal portion extending into the fornix, the laceration may be united. Emmet referred a whole series of injurious consequences to such lateral lacerations, and united them. The cicatrized margins of the wound were freshened and stitched together with wire sutures, thus restoring the former shape of the vaginal portion. Where there are two lacerations, one of the lips is not rarely so atrophied that after bilateral freshening hardly any room remains for the os. However, these lacerations are so frequently found without any symptoms that I am altogether skeptical as to the necessity for the operation and the certainty of a result." Thus, in a few lines, is one of the greatest advances in the surgery of women dismissed!

Chapter XII. treats in a singularly clear and exact manner of the subject of uterine displacements. As has been already stated, the uterus, according to Fritsch, is within certain limits normally mobile. If these limits be exceeded, or if the uterus becomes so fixed in any position as to lose this normal mobility, a pathological state exists. Starting with this assumption, versions and flexions and descensus are in turn carefully considered, and the deductions drawn as to treatment are eminently sound. Whilst the forms of pessaries recommended are in the main those in common use in this country, the open cup so serviceable in anterior displacements is lacking. The author, however, wisely omits or condemns many forms positively injurious, yet uniformly reproduced in most gynecological works, because it has become fashionable to figure them. Worthy of special praise are the pages devoted to ante-flexion. If the precautions laid down as necessary where intra-uterine stems are used were generally taken, fewer mishaps would follow their use.

The remaining chapters consider new formations of the uterus, diseases of the pelvic connective tissue, diseases of the tubes and ovaries, hysteria. They require no special criticism, being on a level with recent researches and methods of procedure.

Such, in outline, is Fritsch's manual—complete, exact and distinct. It is cordially recommended to students generally

and to all practitioners who, from lack of time, or special inclination, do not care to consult more voluminous treatises.

The translator has done his work in the main satisfactorily.

E. H. GRANDIN

**DIE ENTZÜNDUNG DES BECKENBAUCHFELLS BEIM WEIBE.—INFLAMMATION OF THE FEMALE PELVIC PERITONEUM.** By DR. J. HEITZMANN. Vienna: 1883. Wilhelm Braumüller, pp. 230, 77 illustrations.

This work gives us the result of the author's observations in two hundred and fifty cases where the inflammation appeared to have involved the pelvic peritoneum to a much greater extent than the subperitoneal cellular tissue.

These observations were made upon patients frequenting Professor Bandl's service at the Vienna Polyclinic during a period of two years.

The author insists strongly on the statement, and herewith takes issue with Emmet, that it is possible, in the majority of cases, to say whether the inflammation is chiefly peritoneal or subperitoneal, and even goes so far as to assert that a probable diagnosis can be made in the acute stage of the inflammation, before the exudation has become solidified or organized.

In cases of puerperal peritonitis, the author admits, however, that an accurate differentiation of the peritoneal inflammation from the subperitoneal, which, in these cases, is always associated with it, is generally impossible at the outset. But if the patient survives such an attack, the author thinks we can generally determine pretty accurately later in the history of the case which anatomical parts were the chief seat of the inflammation.

In the list which the author gives us, it appears that about one-half of his recorded cases do in fact date either from an abortion, or from a labor at full term. When the pelvic peritonitis originates from endometritis, or metritis, or from gonorrheal infection, the subperitoneal connective tissue is apt to be less implicated, and hence a nearer approach to an exact diagnosis can generally be made.

The first symptoms of both affections are pain and fever; but, while the pain of pelvic peritonitis is more or less shifting in its character, that of parametritis is generally pretty strictly localized. The fever, too, of pelvic peritonitis, unless suppuration occurs, is neither so high nor so continuous as that of parametritis. The uterus is freely movable in the first stage of pelvic peritonitis, and gentle efforts to raise it cause but little pain. The uterus becomes at once fixed in parametritis, and any pressure upon the organ causes pain.

Exudations within the peritoneum are, as a rule, higher than subperitoneal exudations. Intra-peritoneal exudations are often found above the pelvic inlet, and in the iliac fossæ. The fornix vaginae retains its normal contour in the case of pelvic peritonitis, while it is flattened when the exudation is in the subperitoneal connective tissue.

"When the process has become chronic, the exudations within the peritoneum, even when considerable in extent, may cause but little constitutional disturbance, whereas very slight exudations into the subperitoneal connective tissue give rise to fever and general prostration of strength." To this proposition I do not think the best modern observers would be likely to give their assent, nor to the following:

"Parametritic (subperitoneal) exudations are almost always evenly distributed around the cervix." That intra-peritoneal exudations can generally be more plainly felt upon one side than upon the other, and are frequently (in fact in the majority of cases) to be found in Douglas' pouch, is undoubtedly true.

A large proportion of uterine displacements are believed by the author to be due either to the pressure of intra-peritoneal exudations upon the uterus, or to the traction of pseudo-membranous adhesions (originating from some past attack of peritonitis) upon some portion of the organ. The original attack of pelvic peritonitis, which was the "*fons et origo mali*," is often entirely overlooked. The patient herself is often entirely ignorant of the true nature of such an attack. Not only the patient herself, but even the attending physician, is very prone to regard such an attack as one of acute "intestinal catarrh," inasmuch as the severe griping pains experienced under such conditions often present a sufficiently close resemblance to those of intestinal colic as to deceive the unwary.

The author believes, too, that what is commonly known as "milk fever" may generally be attributed to a slight attack of peritoneal inflammation.

Of the displacements of the uterus, which this disease may secondarily cause, theretro flexions and retrositions have most importance, clinically.

These malpositions may often be reduced by appropriate treatment, but when unrelieved, are a fertile source of sterility and abortion.

Sometimes the uterus becomes imbedded in false membranes and undergoes premature atrophy. The ovaries, too, may undergo atrophy from the same cause, the Fallopian tubes may be compressed and their calibre stenosed, or they may become actually detached from the uterus. Adhesions between adjacent intestinal coils may cause frequent attacks of constipation, alternating with obstinate diarrhea, colic, etc. The author agrees with Schroeder in thinking that hemorrhages from newly-formed membranes may lead to hematocele. The inflammation of the peritoneal investment of the uterus may be propagated to the outer muscular layers of the organ itself and lead to increased proliferation of connective tissue elements between its muscular fibres. This process may advance to such a point as to convert the outer muscular layers of the uterus into a firm, inelastic capsule, and in this way another explanation is furnished of the frequent abortions in women who have once suffered from an attack of pelvic peritonitis.

Inflammation of the peritoneal investment of the ovary also may be propagated in like manner to the cortical layers of that organ, leading in like manner to increased connective tissue proliferation. In this way the bursting of a ripened follicle may be prevented, and the first impulse given to the production of an ovarian cyst. When premature atrophy of the uterus or ovaries, or of both, occurs, a high degree of hyperesthesia, anemia, and weakness are generally observed to be the result.

The author believes that pelvic peritonitis, as an inflammatory process, is always acute, and when the inflammation assumes a chronic character, he believes that it always does so by virtue of the secondary attacks which the exudations that have been poured out have induced, or by virtue of an association of parametritis with the pelvic peritonitis. In the latter case, the patient may die



from the exhaustion of the long-continued fever, or from some intercurrent disease, such as pleuritis or pericarditis.

The sterility which so often follows an attack of pelvic peritonitis is due either to the impediment to the passage of the spermatic fluid into the body of the uterus, which the sharply flexed cervical canal presents, this flexion being, as the author thinks, in a large number of cases the result of pseudo-membranous exudations, or adhesions, or to the atrophy of the uterus and ovaries, which pelvic peritonitis is apt to induce; or, finally, it may be due to the fact that coitus in these cases is often impossible, in consequence of the pain that attempts at sexual intercourse occasion. The changes in the cortical layers of the uterus above alluded to, undoubtedly predispose to rupture of the uterus when labor occurs in these cases at full term.

Faulty presentations of the fetus, too, are apt to be caused by some of the fixations of the uterus to the pelvic walls which occasionally result from an attack of pelvic peritonitis.

Lastly, the importance of this disease in the production of extra-uterine pregnancy is generally admitted.

The author says that the prognosis of the disease is generally favorable, as regards life, so long as extensive pelvic abscesses have not formed, and firm adhesions between adjacent organs (as more particularly the intestines) have not been produced. With regard to future freedom from all unpleasant sequelæ, however, the prognosis may, in general, be said to be unfavorable.

The author believes, that, in many cases, all treatment is futile. As, however, it is never possible to tell from the outset how much or how little benefit may be expected from treatment, we should never despair of relieving, at least in some measure, the patient's sufferings. Much can be done in the way of prophylaxis, if the patient is seen early enough.

Rigid antiseptic precautions should be observed in all the necessary manipulations upon the parturient woman, particularly when the application of instruments is demanded. In the treatment of infectious catarrh of the vagina and cervix we should avoid making use of too stimulating applications. Undue menstrual hyperemia being one of the most common predisposing causes of an attack of pelvic peritonitis, we should endeavor to mitigate this hyperemia, whenever we find it existing in our patients. When, for instance, in the case of a young girl with whom menstruation has just become established, we learn that much pain and febrile movement attend the function, we should enjoin repose, and recommend mild antiphlogistic measures during the period. In this way, we may often prevent this abnormal menstrual congestion from passing into fully developed endometritis. Strict rules as to diet and regimen should also be enjoined during the intervals. When endometritis already exists, we should be careful not to make too stimulating applications to the uterus.

The acute attack should be combated by local applications of cold, and febrifuges, if much fever exists. The author believes that we have in Leiter's tubes ("Wärme-Regulator") an admirable apparatus for effecting the abstraction of heat.

He has applied the same principle to an apparatus which he has himself devised for applying cold directly to the vagina.

The apparatus consists of a coil of "Leiter's tubes" inclosed in a cylindrical metallic capsule. This apparatus may, he says, be kept in the vagina for hours, without causing the patient the least discomfort, and in many cases it affords marked relief.

When the most acute symptoms have subsided, but the exudations are still soft, recourse may be had to local absorbent remedies; but the internal exhibition of absorbent remedies is, he thinks, generally of no avail. For external application, the author recommends the following formulæ:

	Grams.
R Potass. iodidi.....	1.00.
Iodinii.....	0.10.
Vaselinae.....	30.00.

M. and S. A piece of the size of a hazelnut to be rubbed into the groins. Or:

	Grams.
R Potass. iodidi.....	1.00.
Iodinii.....	0.10.
Glycerinae.....	30.00.

S. for pencilling. And the following:

	Grams.
R Morphiae muriat.....	0.10.
Unguent. cinerei.....	1.00.
Butyr. cacao.....	15.00.

Ft. suppos. No. vi. Or:

	Grams.
R Morphiae acetat.....	9.10.
Sapon. medic.....	1.00.
Gelatinae.....	q. s.

Ut ft. glob. vaginal. No. x.

Hip baths may also be used at this period, but vaginal douches are to be avoided as long as the peritoneal exudations are fresh. When, however, the exudations have become firm and elastic, and we wish to soften them, preparatory to the employment of massage, hot irrigations are very useful.

The happiest results have been obtained by the author in the reduction by massage of the flexions of the uterus caused by pseudo-membranous adhesions, and he thinks the measure of the success achieved by this plan of treatment depends largely upon our choosing the proper time for beginning the treatment. It must also, of course, when once begun, be systematically and patiently carried out.

When the exudations are firm, the application of iodoform to the cervix by means of tampons of absorbent cotton sometimes appears to be of great service. These applications seem to have a particularly happy effect when oöphoritis or perioöphoritis are present. The following formulæ are recommended:

	Grams.
Iodoformii.....	1.00.
Glycerinae.....	10.00.
Ol. menth. pip. ....	gtt. v.

And:

	Grams.
Iodoformii .....	1.00.
Ol. olivæ . ....	10.00.
Ol. geranii.....	gtt. v.

The author disapproves of too energetic surgical interference in the case of pelvic abscesses, and thinks that, unless the symptoms are urgent, we may often safely leave to nature the care of effecting the evacuation or absorption of the pus. Should we, however, have reason to fear the penetration of the pus into the peritoneal cavity, unless an artificial outlet be made for its escape, we should then, of course, not delay the operation.

The last chapter in the book gives the history of twenty cases in detail, and is accompanied by diagrams representing roughly the extent of the exudation: the position, size, and shape of the uterus, and its appendages in each case, as established by bimanual palpation at different periods, while the case was under observation; and the changes that were noted at these different periods. This plan of mapping out in schematic form, as clearly and as accurately as possible, the discoveries that the bimanual touch yields is, so far as I know, original with the author, and it would be well if it could be adopted in treatises on gynecology and in descriptions of diseases of the female sexual apparatus generally.

Finally, we find tabulated at the end of the book very full statistics of the two hundred and fifty cases, which form, as it were, the substratum of it. Here the age of each patient is noted, the section of the peritoneum which appeared to be involved in each case, the cause of the attack, so far as it could be ascertained, and the effect of the treatment employed, etc.

This volume is embellished by a number of the author's own drawings of anatomical preparations in which the signs of old peritoneal inflammation were found to be marked.

The patients from whom these specimens were removed all died, the author tells us, of diseases not directly connected with the sexual apparatus, and no history of previous disease of the sexual organs was elicited from the majority of them before death. Yet they must all, to judge from the extent of the pseudo-membranous adhesions and the manifold distortions of the uterus and its appendages thereby caused, have suffered at some period of their lives from one or more severe attacks of pelvic inflammation. In fully two-thirds of the patients frequenting Professor Bandl's Clinic in Vienna, the author found evidences of present, or remnants of past, attacks of pelvic peritonitis.

This proportion will appear to many observers much greater than the average in their own experience, yet Dr. Heitzmann has made a most careful, conscientious study of all his cases, as any one who will take the trouble to look over this book can plainly see. Perhaps he has drawn the line sharper than it really exists between inflammation of the pelvic peritoneum and inflammation of the subperitoneal connective tissue within the pelvis. His zeal for establishing a clear distinction between the two diseases has not at any rate, I think, carried him far beyond the bounds of scientific accuracy.

PHILADELPHIA.

HENRY M. FISHER.

TRANSACTION OF THE OBSTETRICAL SOCIETY OF LONDON, FOR 1882.  
London: Longmans, Green & Co., pp. 315, 4 colored plates, 7 woodcuts.

This volume, uniform in size and dress with its predecessors, contains hardly as much as usual that is valuable and interesting.

W. S. Playfair in a paper on *Hystero-Trachelorrhaphé* (by the way, why not call it by its Anglicized name, *Hystero-Trachelorrhaphy*?)



calls attention to the neglect which it has received from British gynecologists.

He was prejudiced against the operation till a patient, whom he had long treated unsuccessfully, on the occasion of a visit to America, had trachelorrhaphy performed and returned home perfectly cured, but he has since done the operation many times and now speaks strongly of its value.

In regard to methods of examination (and it certainly seems strange that our English brethren should be so obtuse as not to appreciate the merits of such a perfect instrument as Sims' speculum), we are told that that speculum, as an ordinary aid in uterine examination, is, as yet, very little used.

In the discussion of the paper which follows, Matthews Duncan considers trachelorrhaphy to be a very small affair, and says that if the lacerations were disregarded in the Emmet cases and new ones made by cutting out a bit of the cervix, by caustic potassa or the knife, that cures would follow just as well as after trachelorrhaphy. The fact that he admits never having done the operation decidedly lessens the force of his remarks.

A paper on the *Natural History of Dysmenorrhea*, by John Williams, is a summary of observation made in one thousand nine hundred and forty-four cases.

Of this number eight hundred and seventy-three suffered from primary and only eleven from acquired dysmenorrhea. His conclusions are that dysmenorrhea in single women is rarely acquired but almost invariably appears with the menstrual function; that in rare cases it may cease spontaneously a few years after puberty. Menstruation is regular in about two-thirds, profuse in two-fifths, scanty in one-half, and contains clots or shreds in three-fourths of the cases. The uterus is imperfectly developed; the cervix may be conical, the os small and round, stricture of the canal in any part of its course is infinitely rare. The menstrual pain is the result of spasm of the uterus, excited by the separation and expulsion of shreds of decidua and clots.

In a well-written paper on *Dysmenorrhea as caused by Backward Displacements of the uterus*, Ernest Herman shows that there is no anatomical evidence that retroflexion of the uterus causes any hindrance to the outflow of fluid from its cavity, except when the uterine wall has been thinned by senile atrophy, or when the organ has been fixed by adhesions, and, furthermore, he shows that the dysmenorrhea is due to congestion produced by the pressure of the the utero-sacral ligaments on the veins running in the broad ligaments, supporting his theory by anatomical evidence and clinical facts.

A singular case is reported by Mr. J. Hopkins Walters where a midwife, in the attempt to remove a retained placenta after labor at term, had torn out the entire uterus, and where, strangely enough, the patient made an excellent recovery.

A similar case with like result was reported by E. Schwartz in the *Archiv für Gynäkologie*, XV., 1, where he also states that he has found recorded only four similar cases, in three of which the patients recovered.

Arthur W. Edis tells of a case where in epithelioma of the cervix uteri blocking the natural passages, a living child was delivered by Cesarean section, the mother recovering.

Two other cases of *labor complicated by cancer of the cervix*, are reported by G. E. Herman, in which the obstructing growth was removed and the child delivered by forceps. In one case the

mother did well, in the other phlegmasia dolens was developed and the patient died on the eighteenth day after delivery.

Chahbazian reports brilliant results from the use, hypodermically, in post-partum hemorrhage, of from three to ten minims of a solution of ergotinine, containing one one-hundredth gr. to ten minims. The number of original papers is rather less than usual, but those mentioned here are quite up to the standard.

B. H. WELLS.

## ABSTRACTS.

1. R. Rumpe (Marburg): *On Parturition in old Primiparæ* (*Arch. f. Gynäk.*, XX., 1).—The subject has recently received considerable attention by Cohnstein, Ahlfeld, Hecker, Krüger, and Winckel. Inasmuch as the conclusions reached by these observers have been lately controverted in a paper by Mangiagalli, the author has reinvestigated the matter, using in his research the material of the Marburg obstetric clinic.

From which year on shall a primipara be called old? R. sides with Cohnstein and Hecker in placing the turning-point at the thirtieth year. Whole number of labors, 3,155; of these 1,481 were primiparæ of whom 114 had passed the thirtieth year. The percentage of old primiparæ, therefore, is 3.61 of all parturients, or 7.69 of all primiparæ. These figures agree in the main with those of Hecker, but differ from those of Ahlfeld.

Of the 114 labors only 100 could be used statistically; their ages were: 30-34, 78; 35-39, 13; 40-45, 9.

Etiology.—The number is probably small in which despite a normal condition of the genital organs coition did not take place or fruitful semen did not surround the cervix before the thirtieth year. A larger number probably is furnished by those in whom there existed some local trouble which prevented conception until removed by appropriate treatment. Still another group is formed by those in whom some unknown affection hindered conception. This seems to be indicated by the facts that some women conceive only after having practised coition for years and without having undergone any treatment, and that we are able to prove deviations from the normal average conditions of menstruation. Hecker assumes a torpidity of the sexual life. It will be almost impossible to find a satisfactory explanation, and the hypothesis will have to suffice that menstrual anomalies probably have some etiological bearing. Narrowness of the pelvis (Cohnstein) is to be denied. Rigidity of the vagina, of the introitus, and of the lips of the os, as well as agglutination of the external os are concomitant phenomena of advancing age, hence sequels rather than causes. Fibroids and sarcomata of the uterus are so rare that they may likewise be left out of the consideration.

R. is unable to add anything to our knowledge respecting the duration of pregnancy.

The labors of old primiparæ are generally considered prognostically unfavorable for two reasons—inefficient labor pains and rigidity of the soft parts. The author's cases in general confirm these views. Frequency of perineal lacerations, 25.6 per cent. Abnormal presentations, 8 per cent (3 pelvic, 3 face and forehead, 2 transverse). All other before-mentioned observers likewise found an increased number of face presentations, and a theory is advanced to explain this circumstance through the rigidity of the os and the lower uterine segment, but no proof of it could be furnished.

In R.'s 100 cases operative interference was required as follows: the application of the forceps, 27 times; perforation, 4 times; version, once; Cesarean section, once; induction of premature labor, once—34 per cent. Yet the number of contracted pelves did not exceed the ordinary average.

The mortality was 8 per cent and the morbidity 49 per cent—rather high figures. Seventeen per cent of the children died either inter partum or within two weeks thereafter. The weight of the children exceeded the average as it did in Cohnstein's cases. Proportion of males to females, 121 : 100.

In summing up, R. confirms the results obtained by Ahlfeld, that two factors cause anomalies in the labors of old primiparæ—inefficient labor pains and rigidity of the soft parts. The former lengthens the course of labor and of the lying-in and thus indirectly favors the disturbances usually following protracted labors. The latter increases the painfulness of the uterine contractions, causes frequent perineal lacerations, and perhaps favors the occurrence of face presentations. Mangiagalli's view, that malformations are found in greater proportion in old primiparæ than ordinarily, and that thus alone the prognosis is rendered worse, finds no confirmation in the author's experience. The unfavorable factors are not constant, but change with the age of the mother.

**2. Paul Gerhardt: On the Amputation of the Vaginal Portion; its Indications and Methods** (*Inaugural Dissertation, Halle-Wittenberg, 1883*).—Inasmuch as there is no generally recognized method of executing this operation, the author has set himself the task of critically examining the various forms proposed. He excludes the operation for carcinoma and that for prolapsus with hypertrophy, restricting himself to that for abnormal shape, non-malignant alteration of the vaginal portion, and chronic metritis. According to G., the operation is indicated, first, in chronic metritis when there is hypertrophy of the vaginal portion; second, in old cervical catarrh with follicular erosions or cystoid degeneration; third, in faulty development and stenoses of the lips of the os, causing retention of secretions, dysmenorrhea, and sterility. Stenoses of the ora are the most important, whether congenital or acquired. The main object in the treatment of stenoses is, to dilate them so as to keep them permanently patulous. This is possible only when the cervical canal is widened by the bloody ablation of a part or the whole of the vaginal portion. How tedious, dangerous, and unsatisfactory it is to dilate stenoses by incisions may be instanced by Kehrer's method. Until the most recent times, only three methods were in use—that by the knife, the galvano-caustic loop, and the *écraseur*. The latter operation, though apparently very simple, has its great disadvantages, as proved by the



many untoward accidents reported and the imperfections connected with the instrument and its application. For all these reasons G. rejects *écrasement*, the more so because it is out of date nowadays. *Maison-neuve's* constrictor offers no particular advantages over the former. The technique of the galvano-cautery is almost the same as that of the *écraseur*. After discussing its good and bad points, G. concludes that all other operations must give way to the knife. This method has passed through numerous modifications. A good plastic method, according to Knester, must offer the following points: 1. It must permit the parts to be so arranged beforehand that the healing process can cause no material change in them. 2. It must offer nearly absolute certainty against after-hemorrhages and the occurrence of all kinds of wound affections. 3. The after-treatment must be so simple as to consist merely in the removal of the sutures, so that further molestation be spared to the patient. G. then reviews the operations of Sims, Hegar, Simon, Schroeder, and Simon-Markwald, all of which have their faults. The best is Fritsch's wedge-shaped excision. It is described as follows:

One or two days before the operation, the patient irrigates her vagina three or four times in the twenty-four hours, taking a sitz-bath if necessary, as so to guard against infection; the patient is not chloroformed and placed in the ano-dorsal position. The irrigating speculum is inserted and the vaginal portion split laterally as far as the fornix. Then a wedge is excised from the inferior lip, the knife being introduced one and a half centimetres below the end of the lateral slits and continued obliquely to the middle of the internal os. This incision is met by another at a right angle. Thus are secured two wound surfaces which coapt themselves spontaneously and merely require to be united by the suture. The anterior lip is treated in the same way. The free lateral wound margins are finally joined by one or two needles. This method answers all the requirements of a good plastic operation. The margins of the wound coapt themselves spontaneously, there is no tension or traction. The hemorrhage is arrested in an easy and simple manner. Thus, as well as by the antiseptic precautions, the fear of wound affections is done away with. The after-treatment, like the entire manipulation, is so simple as to require no further description. This operation is distinguished above all others by its simplicity and facility, its applicability to all cases, and the positive permanence of its results. It is destined soon to supersede all other methods and will be especially welcome to the practitioner. In conclusion G. again emphasizes that in every amputation of the vaginal portion the first principle should be, to make the incisions in such a way that the suture joins the coapted edges without any traction.

# DEPARTMENT OF DISEASES OF CHILDREN.

EDITED BY . . . GEORGE B. FOWLER, M.D.

## ORIGINAL COMMUNICATIONS.

### A CLINICAL REVIEW OF THE METHODS IN GENERAL USE FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.

BY

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(Continued from p. 667.)

THESE opinions upon the efficacy of the jacket are so diverse and this method of treatment is still so new, that we cannot as yet consider the question settled. We may easily illustrate the mechanism of the effects of suspension upon the spine by taking the weighted lead strip already referred to, and hanging it (Fig. 10) so that the lower weight will swing clear of the floor.

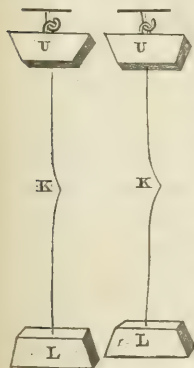


FIG. 10.—Showing effect of suspension.

It will be found that the knuckle will tend to disappear, but no weight which can be applied, proportionate to the relative weight of the lower extremity and the strength of the spinal column in the human being, will take out the knuckle entirely, and this mechanical illustration applied to suspension as a method of treatment will lead us to suppose that no suspension force—or jacket arranged to retain such force—can obliterate a knuckle entirely, if it has once formed, it may be ever so slightly.

To make the jacket effective above the seventh dorsal vertebrae, Sayre's jury mast is advocated, "consisting of a steel rod, secured to two pieces of malleable steel, which are placed on

either side of the spine, and which can be bent so as to accurately fit any curve in the plaster jacket, which has already been applied to the entire trunk of the diseased patient, and retained accurately in position by having attached to them three narrow strips of perforated tin, F. F., which should be long enough to very nearly encircle the entire trunk, leaving only a central line of an inch or so in width in front of the body, for the purpose of cutting or sawing down the plaster jacket whenever it may become necessary to remove it. The central bar, C, is attached by two cross-bars to the upper portion of this malleable framework, and is curved over the top of the head to the vertex; and to its extremity is attached a swivel bar, B, three to five inches in length, from which the head is suspended by adjustable straps, A, secured under the chin and occiput. This upright bar is made in two pieces running into each other at the straight portion, D, behind the neck, and capable of being extended to any desired length, and firmly secured in position by screws. To apply the apparatus, the patient is suspended in the usual way, from the axillæ, chin and occiput, and the plaster bandage applied, as usual, over a tight fitting knit or woven shirt. After the bandage has been accurately applied, the patient is removed from the suspending apparatus and carefully laid upon an air-bed until the plaster has hardened or 'set.' The patient can then stand up, and the apparatus for suspending the head is applied in its proper position, over the back of the plaster jacket, and the lower portion of it bent and moulded until it accurately fits all its various curves. The loose tin strips, being very flexible, can then be smoothly moulded around the jacket which has already been applied to the trunk, and another plaster bandage having been wetted in water is to be carefully and tightly applied over the apparatus and jacket first applied, in sufficient number of layers to make it perfectly secure. The tin being rough and perforated, a sufficient amount of plaster will be incorporated into its holes and meshes to prevent any possibility of displacement. We have now a secure point of support from the pelvis and trunk from which the head can be sustained by properly adjusting the movable rod and securing it by screws."

The main objections to the jury mast in the treatment of upper dorsal disease are, first, the extreme mobility it allows,



without capacity for fixation and the degree of traction it necessarily exerts upon the cervical vertebræ, which is unnecessary if they are not involved in the disease.

Shaffer, in writing of the jury mast, records it as "inoperative as an effective means of extension, for what child could or would tolerate an absolute extension force to the head for a length of time sufficient to cure spinal caries, at for instance, the second to sixth dorsal, the region most difficult to control in the whole vertebral column."

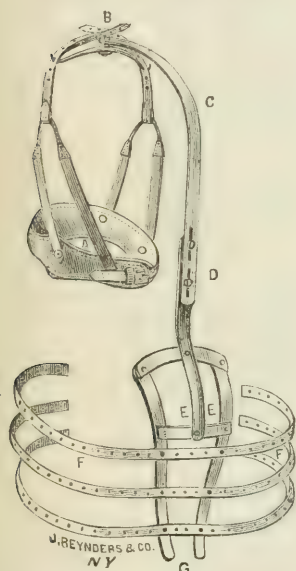


FIG. 11.—The jury mast.



FIG. 12.—Posterior view. The jury mast applied.

Still, in practice cases will be found where it is convenient to apply it as an adjunct to treatment by the jacket, and I have derived some very fair results from its use, after learning, by an unsuccessful experience, to bend the steel rod *backward* to such an extent as to relieve the bodies from pressure, and partially transfer weight to the posterior processes of the vertebræ.

3. LOCAL EXTENSION.—The use of the plaster jacket is attended with one very serious disadvantage, viz., it does not permit exposure of the surface about the diseased portion and does not permit of changes in the corrective force employed.

To remedy this, it occurred to me in 1878 to divide the jacket into two segments and connect these by adjustable ratchets.

This idea of division was first advanced in a pamphlet published by Geo. Tiemann & Co., in 1878, from which the enclosed paragraph is extracted :

“When the lower dorsal and lumbar vertebræ are involved.

Requirements : 1st. Exposure.

2d. Immobility.

3d. Facilities for extension or retraction.

4th. Relief from the weight of the parts above.

These are met by the employment of plaster-of-Paris bandage and either of two brackets devised by the writer.

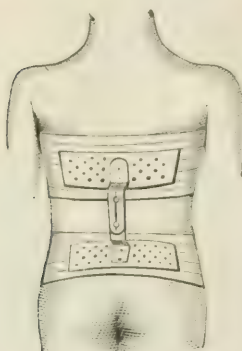


FIG. 13.

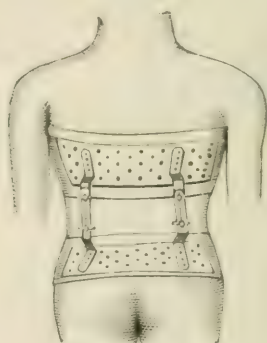


FIG. 14.

The first is composed of two zinc plates, perforated, firmly riveted to and connected by a strong strip of vulcanite, provided with a ratchet, and raised above the surface in the centre (see Fig. 13).

The second is like the first, except that two ratcheted strips are provided instead of one, and possesses the advantage over it of increased strength, and the avoidance of the vertebral projection (see Fig. 14).

If the deformity is great, it will be necessary to suspend the patient during the application of the plaster which is laid around the chest above the site of the disease and around the pelvis below it.

When it has set, the bracket is applied, secured with fresh

turns of the plastered bandage, and finally the whole surface is neatly covered with bleached muslin rollers, and the degree of extension adjusted by the ratchets.

The practice of encasing the waist in plaster from the hips to the axillæ (well known as Sayre's method) is superior to most of the braces in use on account of its *immobility* and the *ease* with which it is carried by the patient even for a prolonged time, the weight being so well distributed.



FIG. 15.—Stillman's Sector Bracket for the divided jacket.

Its *chief disadvantages* are :

- 1st. Impossibility of ascertaining the progress of the disease until the splint is removed.
- 2d. Impossibility of graduating the local pressure.
- 3d. The patient's form is obliged to remain in the position it assumed during the application of the plaster until the splint is removed.



The various braces, on the contrary, do not produce sufficient immobility without causing severe and unequal pressure upon some of the most prominent points of the trunk, but they possess the advantages of being *more easily regulated* and of allowing *inspection* of the diseased region.

By using the plaster-of-Paris bandage and the brackets originated by the writer, we are enabled to combine the advantages of the two, viz.:

- 1st. Immobility.
- 2d. Exposure.
- 3d. Facilities for extension or retraction, and yet avoid the disadvantages of each used singly."

And in August 1879, a paper in the *New York Medical Record* was published, from which the subjoined cut is extracted (Fig. 15).

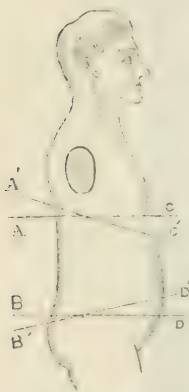


FIG. 16.

But as a result of my experiments the flexibility of the spinal column was found to be such that, were the extension exerted by an upright placed parallel to the back and along the course of the spine, the distance which would naturally exist between the axis of the spine and the vertical upright would simply insure the shoulders being thrown further forward, owing to the unequal resistance which the bodies of the vertebræ would offer to a force placed so far behind them, thus necessarily causing increased traction upon the posterior articular surfaces which do not require it, not being affected by the disease.

It will readily be seen by reference to the diagram (Fig. 16) that elongation of the distance  $AB$  to  $A'B'$  by an extension ratchet would cause the points  $C$  and  $D$  to approach each other anteriorly ( $C'D'$ ), and would thus cause increased pressure upon the bodies of the vertebræ, tending of itself to favor the formation of a knuckle instead of retarding it. This might be so remedied as to produce a *symmetrical* extension of the vertebræ by means of a ratchet bar placed anteriorly; and could we obtain proper points of attachment to the body for the exercise of the extension, this might be successful, but we cannot

without making abnormal upward compression upon the ribs, whose functions in respiration require them to have full play. The same difficulty meets us in placing the ratchets at the side, although to a less degree; but by placing the ratchets upon all four sides of the body, we can obtain sufficient muscular stretch to produce fixation, and thus to relieve the diseased portion from pressure.

By keeping the segments of the jacket stretched apart as far as possible, and then adding to or decreasing the extension on one of the side bars, the lateral twists may be overcome without interfering with the local extension; and if it is desired to

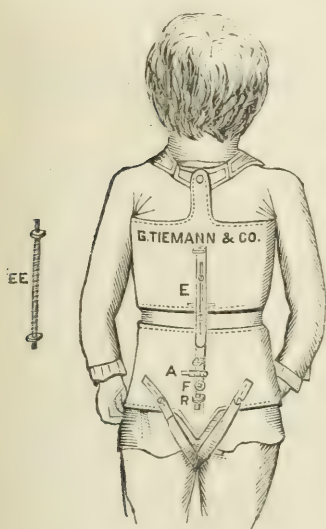


FIG. 17.

Stillman's removable brace for Pott's disease of the lumbar region.



FIG. 18.

curve the spine backward, and yet retain the proper degree of symmetrical muscular stretching, it is only necessary to increase the extension in the front bar.

If we wish merely to have the force so directed as to bend the spine backward until the bodies are relieved from the weight, which is thus transferred to the posterior processes, it is necessary to have but one ratchet placed posteriorly—as in Fig. 17—and supplied with a fixation clamp, which enables it to be tilted back at any desired angle. The form of the clamp is illustrated in Fig. 17, and is operated by a wrench. This

clamp may be placed horizontally, transversely, and vertically, thus allowing the upper segment to be twisted upon the lower—to overcome any lateral curvature which may exist—in connection with the Pott's disease, and yet not interfere with the fixation and backward traction.

(To be continued.)

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## TYPHOID FEVER IN YOUNG CHILDREN.

BY

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It has been pointed out by some of the close observers of disease in childhood that typhoid fever in early life differs much in type from that of later years. Those familiar with this fever in adult life, with its severe abdominal symptoms, intense prostration and frequently fatal termination, often find it hard to recognize the same disease in its milder form in early childhood. The broad term malaria is then used to cover a continuous fever that does not yield to quinine and which may last over a month. That benignant and walking cases of typhoid fever occur in little children more frequently than is often supposed has been brought to my attention by a number of cases that have come to the clinic at the Out-Door Department, Bellevue Hospital, during the past year. The following is one out of a number of cases I have treated and will serve as a fair sample of the rest of them:

John C., aged seven years, was brought by his mother to the clinic Feb. 19th. She found it difficult to state just when the child began to get sick, although I questioned her closely on this point. The boy had formerly been very lively and robust, but for some days had lost his natural vivacity, and failed somewhat. Instead of playing on the street as usual, he would stay in the house and sit near the fire, complaining of feeling cold. He continued to grow worse, until, to use his mother's expression, "he seemed to fade away." He was very thirsty all the time and gradually developed a fever. He was found to have a tempera-



ture of  $102^{\circ}$ , and in spite of large doses of cinchonidia was not free from fever until after the middle of March. The temperature was taken early in the afternoon and at first stood  $101\frac{1}{2}^{\circ}$ , in a week or so it sank to  $100^{\circ}$ , and later on reached  $99\frac{1}{4}^{\circ}$ , when it soon became normal. In a dispensary patient it is impossible to get an accurate fever curve, but on one or two occasions when the temperature was taken later in the day it was found to have increased from  $\frac{1}{4}^{\circ}$  to  $1^{\circ}$ . The pulse varied with the fever. When first noted it was 130, and remained so for several days. It then sank to 120, and down gradually to 100 when the fever subsided. The gastro-intestinal symptoms were not marked. He had no diarrhea at any time. During the first week, indeed, the bowels were quite costive, and after that fairly regular. The tongue was covered with a dirty white fur. His appetite was completely lost, but thirst was continuous. Although he did not complain of any pain, he became much emaciated. It was impossible to locate any special tenderness over the cæcum, as it gave the child much discomfort to press anywhere over the abdomen. The spleen was slightly enlarged and very tender on pressure. Upon palpation under the ribs he would jump with the pain. This tenderness disappeared after the first part of his illness. The only nervous symptom he complained of was headache. This was most intense during the first week, and after that gradually disappeared. His psychical condition was marked by stupidity. Although naturally a bright child, he now viewed everything with apathy. After being ill about a week he got a dry, hacking cough, which lasted most of his sickness. The signs upon a physical examination of the lungs were negative. The child was not confined to bed, but exhibited little inclination to move about, preferring to lie on a lounge most of the time. His mother brought him to the clinic three times a week. The treatment, which at first consisted of large doses of cinchonidia, and later of smaller doses, had no effect upon the disease, but in a few weeks he recovered his usual health and spirits, which have continued to the present time.

Certainly in the crowded tenements of the east side, from one of which this boy came, we have all the elements that are supposed to cause typhoid fever. The sinks, filled with animal and vegetable refuse above, and often poorly protected by traps below, are frequently found in a room in which the cooking is done, and in which several members of the family sleep at night. Opening out of this apartment, there is in many cases a dark room, utterly without means of ventilation, in which the rest of the family sleep. If the sink is in the hallway, there is often only an imperfect partition between it and the living rooms, through which noxious gases can easily penetrate. Vessels containing fecal matter and fermenting filth of all kinds are allowed to stand for hours, or sometimes even for

days in sleeping rooms without being emptied. The poison, whose vehicle is the so-called sewer gas, has here very favorable conditions to generate and infect the impaired constitutions of the inmates. It would seem only rational to suppose that such a poison, developed in densely populated centres, could produce different clinical effects from the marsh miasm of the suburbs. Weak children especially, whose systems cannot so readily resist disease, and who are more constantly confined to the house, succumb more readily to these antihygienic influences than adults.

But the existence of this fever in early childhood is not confined to the poorer classes, and is sometimes seen under apparently the most favorable hygienic surroundings, as is shown in the following case:

On Dec. 25th, I was called to see L. W., aged five years. His mother stated that, as nearly as she could recollect, he began to feel sick about Dec. 22d, when he complained of a continual tired feeling and lost all interest in his toys. As he had previously shown great excitement over the approach of Christmas, this apathy was the more noticeable. Towards afternoon he would become restless and slightly flushed. He had no chill, and as near as I could learn, no cold feelings through the body. His temperature was  $103\frac{1}{2}^{\circ}$ , and pulse 130. As I could find no local cause for this fever, after a careful examination, I put him at once on large doses of quinine. The evening temperatures during the first week were  $103\frac{1}{2}^{\circ}$ ,  $103^{\circ}$ ,  $102\frac{3}{4}^{\circ}$ ,  $102^{\circ}$ ,  $103^{\circ}$ ,  $102\frac{1}{2}^{\circ}$ ,  $102\frac{1}{2}^{\circ}$ —during the second week,  $102\frac{1}{4}^{\circ}$ ,  $103\frac{1}{2}^{\circ}$ ,  $102^{\circ}$ ,  $101\frac{1}{4}^{\circ}$ ,  $99\frac{1}{2}^{\circ}$ ,  $98\frac{3}{4}^{\circ}$ ,  $99^{\circ}$ . The fever gradually subsided until there was complete apyrexia in the evening at the close of the third week. The morning temperatures of the first two weeks were from  $1^{\circ}$  to  $3^{\circ}$  lower than the evening. In spite of this marked febrile disturbance there was very little prostration and an utter absence of those symptoms that constitute the typhoid condition. The child would lie on a sofa during the day, be carried down-stairs when the family went to meals, and was confined to bed only at night. The pulse varied with the temperature, starting at 130 for the first few days, then 120, and gradually down to 90. The most marked gastro-intestinal symptom at first was nausea and a general sick feeling. This he complained of most in the middle of the day. During the first week he had one natural movement from the bowels a day. For the next few days he had two movements, with the feces very soft and copious, then the one natural movement a day returned. The desire for food was entirely lost. There was very general and marked hyperesthesia of the skin. No splenic enlargement was detected, although it was difficult to make a careful examination, as the very general sensitiveness

interfered with the necessary manipulations. In the middle of the second week two rose-colored spots made their appearance, one on the abdomen and the other in the groin. No other spots appeared during the disease. A slight cough was noticed at the beginning of the second week and lasted during most of his illness. About a week after the fever had subsided, a slight relapse was brought about by the child playing too hard with one of his companions. The temperature rose as high as  $102\frac{1}{2}^{\circ}$ , but fortunately, with complete rest, the fever subsided again in two or three days.

I could find no cause, in this case, for the development of the fever, as the child lived in a roomy, well-ventilated house, situated in a healthy part of Madison avenue. One suspicious circumstance, however, was that the crib in which the child slept was placed near a door opening into a bath-room and water-closet. As this door had been kept open at night to allow a circulation of air between the sleeping room and a shaft opening up to the roof from the bath-room, I thought this might give some explanation of the fever. The plumbing of the bath-room and water-closet were found to be in a good condition, however; but the door has since been kept closed at night.

These cases I think represent fairly well the average mild type of typhoid fever as it occurs among young children in New York. The older the child the more closely does the disease approach the classic type of adults. That this benignant fever is really typhoid, and not what is generally styled malarial, is proven by the fact that when autopsies have been made the lesions of typhoid fever have been found present. During 1881 there was an epidemic of fever among the children of the Catholic Half-Orphan Asylum in this city. There were very many cases, and, at first, there was some doubt as to the nature of the fever, until Prof. Janeway found the typical lesions of typhoid fever in the two or three fatal cases. The nature of this fever is also shown by the fact that it always runs a certain course entirely uninfluenced by the large doses of quinine that control simple malaria. Again, there have been cases observed in which an adult and a child in the same family have had an attack of fever, the former suffering from severe typhoid symptoms evidently induced by the same causes that produced the lighter attack in the child. Prof. J. Lewis Smith mentions the case of three children in one family who were suffering from a



mild continuous fever, when their aunt who lived with them was taken with a severe attack of typhoid fever. It is also interesting in this connection to note that in the late epidemic of typhoid fever in Paris the physicians state that the children had a much milder grade of fever than the adults.

One of the most remarkable features of the disease in children is the frequent absence of all abdominal symptoms. The bowels may be natural, or not infrequently costive. In the outbreak at the Catholic Half-Orphan Asylum, Prof. Janeway tells me that only one in seventy cases had diarrhea. It is difficult to locate pain on pressure over any special part of the abdomen. There is usually such general hyperesthesia that the left iliac region appears as tender as the right. Tympanites is rare. Gurgling is not pathognomic, as it may be present in children having a simple diarrhea. Roseola, especially in the mildest cases, is frequently absent. In the epidemic already mentioned as occurring at the Catholic Half-Orphan Asylum, eight cases in seventy showed an eruption. The nervous symptoms are not nearly so prominent as in adults. In the great majority of cases there is a mild bronchial catarrh. This is one of the most constant and important of the symptoms. Not infrequently the disease is diagnosed as a simple bronchitis. The spleen is often enlarged, and may be tender on palpation. I have found it difficult, in very young children, to accurately map out the enlarged spleen. The duration of the fever varies within much wider limits than in adults. Hensch, of Berlin, states that it may last from one to seven weeks. He also divides it into a remittent and intermittent stage. I treated last winter two children in the same family. In a girl of six years the fever, with relapses, lasted eight weeks; in her brother, aged ten years, the duration was three weeks. A most peculiar feature in children is that the fever, after lasting several days, or a week, may abruptly subside. Professor Janeway has especially called attention to the tendency of this fever to abort in children. He has studied a number of epidemics occurring in institutions, notably four outbreaks among the children of the Deaf and Dumb Asylum, and the one that took place at the Catholic Half-Orphan Asylum. He states that in the epidemics he has seen in institutions, only one-half of the cases go on to the full development of the disease. The fever may last

three, five, or ten days, and then abort. This sudden stopping of the fever has not been due to any medication, as the children were simply put to bed and placed on a milk diet. These abortive, and frequently unrecognized cases, may do great harm by infecting their surroundings. Professor Janeway states that in any doubtful case the physician should disinfect the stools and water-closet, and institute a careful examination of the plumbing. At the Deaf and Dumb Asylum bad plumbing and a polluted well were found to be apparently the causes of the fever. Probably the average duration of the fever in cases that do not abort is from two to three weeks. Its most frequent occurrence is stated by Prof. J. Lewis Smith to be between the ages of six and twelve years. It may be present, however, at an earlier age. Prof. A. Jacobi mentions a case in which a new-born baby had the fever, from which it died on the sixteenth day. The autopsy showed slight ulceration of Peyer's patches. The mother was very poorly at the time of her confinement, and the house was in a bad sanitary condition.<sup>1</sup> The mortality from the disease is small. Meigs and Pepper state that in mild cases death scarcely ever occurs, while in more severe forms the death rate may reach five or ten per cent. Henry Ashby, in an article in the *Practitioner*, states that among 265 cases the mortality reached nearly eight per cent.<sup>2</sup> I think this ratio shows a severer type of fever than generally occurs among young children in New York.

In order to make a diagnosis, it is necessary, first, to exclude any local disease with a remittent pyrexia. This is very important, as young children are not infrequently found to be suffering from obscure local disease, without any marked objective symptoms. It is thus necessary in all cases of continuous fever to make a careful examination of all the organs to exclude any mere local affection, before venturing to call the disease typhoid fever. A careful inspection of the fauces, tonsils, and pharynx, will sometimes show a local cause for the fever. A thorough examination of the lungs is always very necessary. A pneumonia may occasionally exist in young children, with very obscure symptoms. In two cases I have found a pneumonia at one apex to be the cause of the fever. That

<sup>1</sup> Medical Record, October 25th, 1879.

<sup>2</sup> Practitioner, London, June, 1881.

the consolidation was not tubercular, but due to a simple pneumonitis, was proven by the subsequent histories of the cases. The abdomen should next be examined to exclude idiopathic inflammations of its organs. The principal thing here to differentiate would be a simple gastro-intestinal catarrh, with a low grade of fever. In typhoid fever, however, the intestinal symptoms that exist have been preceded for some days by the fever. The accompanying headache, bronchitis, splenic enlargement, and sometimes the presence of rose-colored spots, will all assist in the diagnosis.

Second. After having excluded any local lesion as the cause of the fever, the next step is to differentiate it from simple malaria. This is based largely on the duration of the fever after exhibiting quinine in full therapeutic doses. It is impossible to distinguish between the two diseases for the first few days. If, however, in spite of the quinine, an accurate observation of the morning and evening temperatures shows that the fever is not yielding, it is generally pretty safe before the end of the first week to exclude simple malarial poisoning. Bronchitis and gastro-intestinal disturbances being frequently present in both forms of fever, are not of value in the diagnosis. Some physicians refer to this fever under the name of typho-malarial. Professor Janeway, who is one of the recognized authorities on this subject, objects to this term as the name of a distinct disease. He states that he does not believe in typho-malarial fever, except as a combination of malaria with a regular typhoid fever, and that much which is called typho-malarial is really pure typhoid fever. In many of those dying of so-called typho-malarial fever, the autopsy will fail to disclose any evidence of malarial poisoning. Again, occasionally the term typho-malarial is made to cover what is really a pure malarial fever of severe type, and in such cases the autopsy will not show any typhoid alterations. He thinks it would have been better not to have introduced this name, as it has led to confusion by many physicians supposing it to indicate a special disease process, and hence not using proper precautions against typhoid fever spreading. He states he has known very bad sanitary conditions to be allowed to continue because the use of the name typho-malaria had lulled the physician and family into a false security. Probably the term typho-malarial fever is especi-



ally often used in connection with the mild typhoid of children.

Third. It is well to remember that other general diseases besides malaria may be the occasion of a suspected typhoid fever in a child. Acute articular rheumatism and tuberculosis must be kept in mind as among these. It is extremely difficult to distinguish between typhoid fever and tuberculosis before the physical signs of the latter disease have become marked, especially as the tubercles in young children are so apt to be disseminated. The exanthemata are not usually a perplexing element in the diagnosis. The remittent fever of the first few days of measles may awaken suspicion, but the rash will soon clear up the diagnosis.

I have seen a number of cases in which diphtheria, without marked throat symptoms, resembled in clinical history the typhoid fever of childhood. The following cases will illustrate:

Two children, aged five and eight years, were brought to Prof. J. Lewis Smith's clinic at the Bellevue Hospital Medical College to be treated for fever. Their mother said they had lately removed from a very malarious district on Long Island, where they had frequently suffered from ague. The present attack of fever, however, had lasted longer than usual, in spite of the customary remedies. The children stated that they had no pain anywhere, although evidently suffering from weakness and prostration. The temperatures were  $100^{\circ}$  and  $99\frac{1}{2}^{\circ}$ . On examination, the heart and lungs of both were found healthy, as well as the abdominal organs. Finally, their throats were inspected, when the tonsils were found to be both covered by a well-marked diphtheritic membrane. There was nothing to draw attention to this disease in the children, besides the prostration, as they complained of no pain nor difficulty in swallowing the little food they cared to take.

These cases will also emphasize the importance, already insisted upon, of a careful local examination of organs, as occasionally a severe constitutional disease of a different nature from that suspected may be discovered. In these children, the history of a continuous fever, loss of appetite, and thirst, with absence of local pain, all pointed to a diagnosis of typhoid fever.

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## ABSTRACTS.

**1. Simon : Cerebral Sclerosis** (*Gaz. des Hôpit.*, 1882).—PROFESSOR SIMON characterizes the above anatomically as a "proliferation of the connective tissue with consecutive, gradual destruction of the nerve elements." The sclerosis is either superficial or deep seated. The former is the more frequent, and its most frequent seat is in the neighborhood of the tubercle of Roland, and its usual form knotty masses. The superficial and circumscribed sclerosis manifests itself through epileptiform attacks, in which the convulsions gradually extend until consciousness is lost. These attacks are preceded by headache, sleeplessness, crying, and restlessness at night, dizziness, vomiting, and irritability. But the most characteristic symptoms of cerebral sclerosis are decidedly the motor disturbances, paralysis of an upper or lower extremity, or hemiplegia, or facial paralysis, etc., contractions, choreatic convulsions, and tremors. The sensibility is normal, or occasionally there is hyperesthesia. The epileptic attacks are peculiarly severe and obstinate, often twelve to fifteen in twenty-four hours. The nutrition of the child meantime is scarcely disturbed, and febrile movements are slight, and usually only at the beginning of an attack. The disease is usually fatal, but sometimes comes to a standstill. In such cases, the intelligence is apt to be undeveloped. The remedy par excellence is potassic bromide or sodic bromide, alone or combined, and in large doses, counter-irritation to the neck, leeches back of the ears, long luke-warm baths. Hydratic and electric methods of treatment are harmful.

J. F., JR.

**2. Mathelin: Chronic Hydrocephalus Resulting from Acute Meningitis** (*L'Union Méd.*, 48, 1882).—This is the report of the case of a boy six and one-half years old, whose two aunts were insane, and who had in infancy had frequent convulsions. When five years old, he had measles. After this, he lost his brightness, was backward in mental and physical development, and had an inordinate appetite. For a short time before he came into Dr. M.'s hands, he had been peevish, fretful, waking crying from his sleep, complaining of headache, had frequent vomiting, and three or four attacks of tetanic convulsions. Pulse was 90, very irregular and intermittent, the right pupil dilated and not reacting well to light, the temperature 38.5° to 39° C., the bowels confined, and abdomen dilated. Dr. M. diagnosed acute meningitis, and gave a bad prognosis, but in a few days improvement set in, and in about two weeks the child seemed well. Four and a half months after this, there began other more severe nervous disturbances—amaurosis, continual vomiting, general and very great weakness. The child lay motionless. The body was stiffened tetanically, the gaze blank, the pupils enormously dilated, the eyes were ceaselessly rolled up and down, the head from side to side, the lower extremities were flexed, there was incontinence of urine, and frequent epileptiform attacks. This attack Dr. M. considered as a chronic hydrocephalus, consecutive to the acute meningitis. After other treatment had failed, the continued use of the constant current effectually relieved the more severe symptoms, but the convulsions still occasionally occurred.

J. F., JR.

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ORIGINAL COMMUNICATIONS.

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PHYSOMETRA,  
WITH HISTORY OF A CASE.

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BY

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THE peculiar condition of which this paper treats has received a number of names, such as *physometra*, *emphysema uteri*, *hysterophyse*, *metremphysema*, *inflatio uteri*, *tympany of the womb*, *uterine tympanites*, etc., and is defined by Dunglison as follows: "A light, tense circumscribed protuberance in the hypogastrium, obscurely sonorous, with wind occasionally discharged through the os uteri with noise."

Well authenticated histories of this affection being extremely rare, and many obstetrical and gynecological writers having denied most positively that such a condition could exist, it has been thought best to relate the writer's experience of what seems to him to have been a case of *physometra*, and place on record such testimony as he is able to give. It is believed that the account will show that a morbid process may take place by which the uterus is distended to such an extent as to simulate pregnancy, and how easily a respectable practitioner of medicine may be deceived in his diagnosis.



In the spring of 1872, the writer was summoned by a physician living a short distance from his place of residence to meet in consultation over a patient considered dangerously ill. In the note which was received, no particulars were given, the wording being as follows: "Meet me in consultation at once, and bring with you such instruments as you may need to perform the Cesarean operation." No time was lost in obeying the summons, and the patient's dwelling was reached within a brief period. Her medical attendant stated that he believed gastrotomy was imperatively demanded, as she was pregnant, and had gone four months over her time, and as expulsive pains had been felt, he feared a rupture of the uterus. The patient was seen, and proved to be a stout negro woman of about forty-six years of age, according to her own statement, and was probably, as she supposed, near the menopause. The patient herself declared she was certain of being with child, as she had borne children before, and was familiar with all the symptoms. She asserted positively that quickening had taken place about the end of the fourth month; her physician was also sure as to her condition, as he had felt the child. An inspection revealed the abdomen enormously enlarged, the tumor extending far above the umbilicus; there was also considerable lateral enlargement; the breasts seemed full, the nipples pouting. Percussion, however, seemed to negative the other signs of pregnancy, for resonance was discovered over the entire area of the tumor, and auscultation failed to detect the fetal heart-beat or the placental souffle. Her attending physician was asked to withdraw, and the statement was made that the woman was probably not pregnant, which remarks were greeted with a pitying and incredulous smile. It was then suggested that a vaginal examination should be made, and that no harm could result under the circumstances from the introduction of a uterine sound. This was agreed to, and returning to the patient's room, a speculum was introduced, through which the writer passed a sound. Some difficulty was experienced in reaching the external os, and a considerable degree of force was used in passing the internal os, when to the amazement of all concerned, there was a rush of pent-up gas in the operator's face, which was most sensibly felt, and which lasted probably not less than half a minute. This air or gas was entirely devoid of odor. For a few moments neither the physician nor the patient could be made to believe that the trouble was over, but a view of the abdomen dispelled all further illusions. A more careful vaginal examination showed that the cervix had been the seat at one time of extensive inflammatory action, and the cicatricial tissue had probably occluded the orifice of the uterus. There was absolutely no information that could be obtained from the patient that would lead to any explanation of her curious condition. She had always been a healthy woman, and remembered no miscarriages within quite a long time; in fact, she was not sure she had ever had one, and had never been ill with the exception of "womb trouble," for which she had been treated by my professional brother.

This case, so unusual, made a strong impression, and it was determined, should opportunity present, to look up the subject, and record all similar cases that might be discovered. This has been recently done, and although the cases are by no means numerous, yet it is believed sufficient corroborative evidence has been obtained to warrant the belief that the uterus may be dilated by air or gas independent of retained menstrual secretion or the products of conception.

One of the most interesting cases is reported by Leyral fils, in *Gaz. d. hôp.*, Paris 1862, xxv., 259, and is as follows :

Woman, married at twenty-four years; nervous temperament. Two years after marriage had a child, and two years subsequently thought she was again pregnant. Belly developed, and she showed all the signs of pregnancy, aversion to food, nausea, obstinate constipation, etc. At the ninth month, she hoped to get rid of her burden. The ninth, tenth, and eleventh months passed, and during this time she waited in anxious suspense. At the commencement of the twelfth month, the dyspnea had increased to such an extent that the doctor was called. The patient was found in bed lying on her back, and the abdomen presented, as the doctor states, "*un volume monstrueux*." He examined, and found that it was really the uterus that was enlarged. The doctor satisfied himself that urine had been passed involuntarily. Constipation was habitual; bowels had not been opened for twelve days; patient could breathe with difficulty. The whole cavity of the abdomen was occupied by a tumor which, starting from the pelvis, extended to the crest of the stomach, widening on each side in the two hypochondriac regions. On percussing, he obtained a remarkable degree of sonorousness. He was satisfied, after a careful examination, that it was tympanites of the uterus. Desiring to let out the gas or air, he endeavored to reach the neck of the uterus, but in vain. In fact, the neck of the uterus could not be touched at all. A speculum was used, but without effect, so the patient was placed in a cold bath. It was necessary to employ four women to hold her down in the bath. Pressing firmly with his hands over the lower part of the belly, the gas was finally expelled little by little, and the uterus gradually resumed its size (about a man's fist). He had no difficulty in ascertaining this through the now flaccid walls of the abdomen. The escaping gas had no perceptible odor. Napkins were passed around the belly, and the patient made a good recovery.

In Dr. Leyral's article, nothing is said of disease of the uterus.

The next report is by Dr. Thomas Barbour (*Missouri M. S. J.*, St. Louis, 1845, i., 70-71), who relates four cases occurring in his practice, three of the ladies being married, the other

single. Nearly all suffered from impaired digestion, flatulency, and peculiar discharge from the bowels, which were generally serous or mucous. "The phenomena which, however, chiefly attracted my attention, and which have given name to the affection under consideration, was the generation of a vast amount of gas in the cavity of the uterus, which was frequently discharged involuntarily with a considerable report, which circumstance rendered it extremely disagreeable for the female to be in company. Whenever the body was suddenly moved, the passage of the gas per vaginam was obvious to the patients and quite audible at some distance to others. The uterus occasionally became greatly distended with the accumulated gas, but would subside immediately after repeated discharges induced by exertion. There was no doubt whatever as to the source of the gas, the females themselves being convinced that it passed per vaginam; but independently of the evidence furnished by sensation, the fact that it always was discharged involuntarily was, to my mind, satisfactory proof of its existence in the uterine cavity." Dr. Barbour thought the trouble due to irritation of the mucous membrane and ulceration of the tissues of the uterus and the disordered chylopoetic viscera. He believed it was possibly due to decomposition of retained secretions, or, as he thought more certain, the result of direct secretions from the mucous membrane.

Dr. Charles Mitchell relates a case of emphysema uteri, in *Lond. M. Phys. J.*, 1831, n.s., x., 391-392.

Married, nervous, depressed, despondent and indolent, catamenia in reduced quantity with pain at menstrual periods. Was put under treatment, receiving an aperient and tonic mixture. Three weeks later complained of a "loathsome malady by which she had become a burden to herself and a nuisance to society," to use her own words. I mean the collection and consequent explosion of air from the cavity of the uterus. She was put upon tonic and local treatment, but with little result. Finally a gum elastic catheter was introduced into the cavity of the uterus with some amelioration of symptoms. Case lost sight of.

Another case similar to the foregoing is related by Boder, "Ueber Wind- oder Blähsucht des Uterus" *Ztschr. f. Med. Chir. u. Geburtsh.*, Magdeburg u. Leipzig, 1857, xi., 191-195.

Multipara, 44. Had for many days swelling of the abdomen and then suddenly a discharge of air took place from the genitals



similar to intestinal discharges of wind. No pain. Could not visit socially as she could never tell when the discharge would take place. No reason could be ascertained by her physician or herself for this phenomenon. Doctor heard it for exactly fifteen seconds, there was no smell, nor was any ever noticed. Was not cured.

Atony of the uterus has been regarded as a cause for this complaint, and so thinks this writer. No utero-rectal fistula.

Dr. G. P. Allen relates a case of physometra in *Missouri M. S. J.*, St. Louis, 1846, ii., 106-107, as follows:

Mrs. A., injured in 1843 which produced general ill health and prolapsus uteri. Had enjoyed good health previously, but after injury digestive powers were weak, with good deal of costiveness, leucorrhœa, menstrual flow not profuse. Gas from uterus was noticed Oct., 1844; its escape was produced involuntarily by coughing, sneezing, or a slight movement of the body, with an audible report. At times the patient was sensible of a slight stream of gas from the uterus through the vagina, and this sensation would continue some minutes and positively prove to the mind of the doctor and patient its source and location. Symptom persisted until pregnancy took place in 1845, when it ceased.

Editor of the journal in a note states that he believed the discharge to be the result of morbid secretion of the mucous membrane of uterus.

Stendel gives an account of a case entitled "Beobachtung eines Falles von Luftentwicklung in der Vagina und dem Uterus" in *Med. Cor.-Bl. d. württemb. ärztl. Ver.*, Stuttg., 1832-3, i., 73-74.

The author cites the case of a married lady, mother of several children, who for several years had observed in herself a periodical expulsion of odorless wind from the uterus. This expulsion, which was plainly felt and heard, only took place during movements or positions exerting pressure on the abdomen. The lady in question does not present the slightest symptoms of hysteria, and as her general good health, and the long continuance of the condition exclude the supposition of the existence of decomposed substance in the uterus, the author concludes that a peculiar disease of the uterus exists which favors the development of gases in its cavity.

There possibly existed a plethora of the uterus, and a tendency to hydrops ovariorum.

Truchsess also relates a case with the same title, *Med. Cor.-Bl. d. württemb. ärztl. Ver.*, Stuttg., 1832-3, i., 266-268.

Age of patient, thirty-two years. The symptoms of this case are very nearly identical with that of Stendel. They made their

appearance shortly after the birth of the first child, and spontaneously disappeared after the birth of a second child two and a half years later. No anomalies of menstruation, occasionally slight fluor albus, accompanied with small pieces of a whitish-yellow substance.

This author believes that a plethora of the abdomen is liable to affect the abdominal nerves, and bring about by reflex action such a relaxation of the uterine vessels and nerves as to produce leucorrhœa. Under these circumstances the excreting vessels of the uterus may secrete carbonic acid and hydrogen gas in the same manner as the walls of the intestinal vessels do in their normal state.

And this opinion seems to be shared by Blatin and Nivet, who in their book, "*Les Maladies des Femmes*," Paris, 1842, p. 441, allude to what they call hydrophysométrie, a collection of both gas and fluid in the uterus, and state that the gas seems due to a secretion analogous to that which sometimes taken place in the intestinal canal or in the subcutaneous cellular tissue.

In the *Mag. f. d. gerichtl. Arznk.*, Stendal, 1832, ii., 9-13, may be found an article, entitled, "Ueber das wirkliche Vorkommen der tympania uteri" (On the actual occurrence of uterine tympanites).

The patient, a multipara, was walking the floor waiting for delivery, no enlargement of cervix. Examination appeared to indicate eighth month of pregnancy. Belly much swollen. Pains came on with violence and produced no enlargement. In fact there was a contraction of the uterus. Finally passed hand into vagina and index finger into cervix, to expand it. A pain came and the woman suffered so that I withdrew my finger, and then came a report and a quantity of bad-smelling gas escaped. The pains then ceased as well as the air, but recommenced again with discharge of gas so offensive that I had to burn gunpowder. Soon patient was entirely relieved, with flat belly, uterus empty, and cervix large. Concluded that it was a wind mole, or tympanites uteri. Believed that air may be developed from the mucous membrane of the uterus. In this case no mention is made of menstrual suppression which may have produced the tympanites uteri.

L. Ercolani, also reports a case, "*Del fisometra*," in *Ann. univ. di med.*, Milano, 1840, xvi., 491-528, which is substantially as follows.

The patient had been troubled with hysteria at puberty, got over it in a year, menstruating meanwhile with difficulty, was delicate but well formed. Married at twenty, became pregnant soon

after. Had a difficult labor and was in ill health for several months. Describes symptoms of treatment and speaks of metroperitonitis. Had uterine troubles, hemorrhoids, etc. Finally after intense suffering for two days and a half, the uterus emitted air and water; this continued two and a half years after the patient recovered health. Subsequently the menses ceased and the old nausea returned. Pregnant again; easy time, however, at birth. Passed wind from the uterus two more years at varying intervals, sometimes at every hour of the day, especially, however, in the morning. Doctor could feel the gas issuing, no smell, however. General health good, quotes authorities from Hippocrates down in favor of physometra.

The record of the next case is admitted because it bears the sanction of a great name in the annals of gynecology. It is entitled "*Physometra*" (treated at Dr. G. Bedford's clinic at the University Medical College), in *N. York M. Press*, 1860, n. s., iii., 246.

Patient unmarried, aged 20, complained of a jerking pain attended by a considerable distention in the hypogastric region. For four months had not seen menses. No other trouble. On examination the abdominal enlargement represented the form of an impregnated uterus of six months. The tumor never diminished in size, and other reasons were given why it was pronounced a case of physometra by Dr. Bedford. She had been declared pregnant by a city practitioner. After ptyalism had been produced, the abdominal distention had gradually disappeared, the menses having returned four days previously. The case is remarkable as one of those from which physometra resulted without being due to a decomposing fetus or decomposition of retained menstrual fluid, or of a decaying intrauterine growth.

This case is believed to be doubtful by the writer of this paper, and may have been due to flatus in the bowels or retained decomposed menstrual fluid, notwithstanding the assertion to the contrary. As to the matter of apparent discharges of air from the uterus, it should not be forgotten that the vagina may by the forcible expulsion of air produce an audible report, and this fact has been established by the case of Dr. Geo. Harley, related in *Obst. Transactions* for 1863, in which he details a curious case with which he experimented to prove that air entered the vagina and was expelled with noise.

"A pluripara frequently expelled air from the vagina with a loud noise. It was ascertained that no connection existed between the rectum and the vagina. Dr. Harley took a full-sized male catheter to which was attached a long india-rubber tube with a stop-cock at the other end. The catheter was introduced into the uterus, the end



of the tube with the stop-cock being placed in a tumbler full of water. No air escaped when the instrument was in this position, but on placing the open end of the catheter in the vagina, an instantaneous discharge of gas took place.

"The water was found to be sucked up through the tube into the vagina. It was found that the vagina sucked in and expelled the air by spasmodic action. It was further observed that the abdominal muscles assisted in the suction process. The uterus was completely retroverted. This displacement being remedied, and the health improved by tonics, a cure ensued. Similar cases have been reported by Dr. McClintock, and others."

To the mind of the writer there seems no reason, as has been held by many authorities, why carbonic gas should not be secreted by the living membrane of the uterus, for it has been proved, as mentioned by Dalton, that every organized tissue has the power of absorbing oxygen and exhaling carbonic acid, but the precise chemical action by which it originates in the organs is unknown; but, as Dalton says, it is probably by some mode of decomposition in which a portion of the carbon and oxygen present in the tissues separate from their previous combinations in this form, while the remaining elements at the same time unite to produce other substances of different compositions.

Dr. Samuel Ashwell, in his work, "*Diseases of Women*," a text-book most highly esteemed a few years back, devotes some space to the subject under consideration, and his remarks are deemed worthy of reproduction in this place.<sup>1</sup>

"As the uterus is naturally shut up, and greatly increased in size, during pregnancy, so in its unimpregnated state, as the result of functional derangement or inflammation of the lining membrane, from death and decomposition of the ovum, from retention of a portion of the placenta, which may become putrescent, or from accumulation of the catamenial fluid, the cavity may be closed, and the entire viscus greatly enlarged.

"The contents of the womb, under such varying circumstances, must be different. Where, for instance, the solid parts of an embryo have been retained, consolidated by pressure and covered by layers of coagulable lymph, a firm mass will be formed, to which, when expelled, the name of mole is usually given. But where the menstrual fluid is not permitted to escape, however long it may be shut up, it still remains fluid;

<sup>1</sup> Ashwell : *Diseases Peculiar to Women*, 8 vo., 1845, p. 352.

and there will be no difficulty, when it has escaped, either spontaneously or by operation, to determine its true character.

“The pathology of such diseased actions is soon understood; but it is more perplexing to get at the precise cause of an idiopathic distention of the uterus by gas, and of the process by which the os, in order to allow of its accumulation, becomes sealed. There seems no reason for doubting that these events do occur, Frank, Astruc, and others having accurately recorded their histories. It is probably true, that few if any of these larger collections of gaseous fluid take place, independently of pregnancy, parturition, or organic disease. We can suppose that air, being secreted by the extreme branches of the uterine vessels, may escape involuntarily, and not always silently; but where it is retained, and the uterus becomes gradually distended, so as to produce a real tympanites, inflammation in and around the os must have taken place, or induration and contraction of the canal of the cervix from some more permanent cause.

“Mr. Hunter was interested about a case of this kind; but he failed, on an examination after death, in discovering any disease either of the uterus or vagina.

“Many singular cases are mentioned by different authors. It has been said that air has been known to accumulate in the uterine cavity after the death of the fetus, or between the amnion and chorion, the fetus being alive; and Baudelocque was present where the gaseous exhalation, occurring after death, was sufficient to expel the fetus.

“Peter Frank, a name of high repute, relates an example, where, after death, the uterus was hard, enlarged, and elastic, and full of gas of a very fetid smell. There was also ulceration in the cavity, and the neck was indurated. In another case, the os was closed by a polypoid growth. By the same author it is stated that in the wife of a German physician the accumulation of gas was so great that the womb reached from the pubis to the diaphragm.

“I have never seen a true case of tympanites, one where the air has been the product of a morbid secretion from the uterine vessels and where, from closure of the os, it has been allowed to collect for weeks or months in the uterine cavity, and has then,

either spontaneously or by operation, been expelled; but I have several times been called on to cure explosions of gas from the vagina, which, forming in the uterus, escaped involuntarily, and with so much noise as to prevent the sufferer from venturing into society. In one patient, pregnancy always cured the disease; and Gooch confirmed the uterine origin of the gas in these slighter affections, by the fact that in a patient of his the instant pregnancy occurred the malady ceased, returning a few weeks after delivery. Idiopathic uterine tympanites is no doubt an exceedingly rare disease."

Szerlecki, in an article entitled *Physometra*, in *N. Ztschr. f. Geburtsh.*, Berl., 1839, vii., 353-371, gives the following as his views of the malady in question:

"Widows and women married late in life are most subject to *physometra*. The latter frequently simulates pregnancy so closely (even to the formation of milk in the breast), that it sometimes becomes a matter of considerable difficulty to make a correct diagnosis. The gas formed in the cavity of the uterus is either expelled through the os uteri or is reabsorbed. If expelled it frequently has a very disagreeable odor.

"The causes are manifold: taking cold after child-birth or during menstruation, the over-frequent use of cold drinks, acid fruits, or of food productive of flatulency (by females predisposed to it), suppression of menses, frequently repeated abortions, accidental entrance of air when the uterus is distended, and its os open (immediately after birth or shortly after menstruation), presence of decomposed substances in the uterus (fetus, placenta, menstrual blood, serum or slime)."

There is no doubt that the bloodvessels of the matrix sometimes secrete within its cavity a peculiar gas. The author cites many cases, and gives two from his own practice, the first of which refers to a virgin, 39 years old, who had stood half up to her knees in cold water while menstruating. After several days' treatment the abdomen suddenly collapsed, when a large quantity of stinking gas was expelled through the vagina. The second case refers to another virgin, 29 years old, who presented all the appearances of pregnancy. After intermittent treatment for a period of more than a year, the swelling disappeared without expulsion of either gas or water. The former became, very probably, decomposed and reabsorbed, and



was excreted by the skin and lungs. No cause could be assigned for the disease.

One of the most interesting cases discovered is related by Dr. Ray, Eastport, Maine, entitled "Case of Emphysema Uteri," in *Med. Mag.*, Boston, 1833, i., 233.

Married, 40 years old, borne ten children; first under notice in her tenth and last pregnancy. Had a great deal of pain over her womb, which she attributed to wind in the womb, which her physician seventeen years before with her two children so stated. She always was sensible of a passage of wind from the vagina, but did not suspect anything unusual. From the pregnancy with the two children up to the present time, whether pregnant or not, it always continued; never inconvenienced by it except when pregnant, at which time she had pain, and had a discharge about three times a week. Air is expelled with a distinct crepitus, sometimes, not always. When pregnant the air is less often expelled, and because of its accumulation it becomes a source of great pain, but the intense suffering does not occur until after quickening, and continues with little abatement until delivery brings relief. She has always had, besides, more or less wind in the bowels from impaired digestion. No subsequent history. In this particular case the theory of decomposing menstrual fluid or other substances can hardly be considered tenable.

A case reported in the *Med. Times*, Lond., 1847, xvi., 296, entitled "Air in the Uterine Cavity," is not sufficient in its details to prove of much value. It is as follows:

A lady, of florid complexion and languid temperament, concluded herself pregnant and made every necessary preparation for the termination of utero-gestation, when suddenly (on the arrival of that period), without any preliminary symptoms, a violent and distressing eruption of flatus from the uterus took place, accompanied by a loud report, which was followed speedily by a complete subsidence of the tumefaction of the abdomen. The discharge of flatus has been continued daily since the occurrence took place, the symptoms being always aggravated on the near approach of menstruation. There is no communication (directly) between the rectum and vagina, though an eminent writer on the subject, with whom I have corresponded on this case, suggests that there may be a communication indirectly through the medium of the Fallopian tube. The same gentleman remarks: "Accumulations of air within the uterus, under circumstances like those connected with the first part of your case, are of rare occurrence; the flatus in this case, I suppose, is the product of partial decomposition of the menstrual fluid while in process of separation from the circulating mass, or very soon after it has been deposited in the uterine cavity. Air may undoubtedly be imbibed from without by a peculiar action of the uterus, as now

and then occurs to a considerable extent during or immediately after parturition. The accumulation, in the first stage of your case, accompanied by distention of the uterus, must have been a long time in forming, and very likely occurred under the above conditions, its escape being prevented by the closure of the inner cervix, caused by deposition of plastic lymph, the result of that species of inflammatory action which produces the dysmenorrhœal membrane.

Heise (C.), "Ueber Tympanites Uteri" (*Monatschr. f. Geburtshk.*, etc.; Berl., 1858, xi., 136-139) produced by a decomposing fetus, gives the history of a case, and then says that physometrie or tympanites of the uterus may be defined to be a collection of air or gas in the womb producing a distention or enlarged condition of that organ simulating pregnancy. It may be the result of some change in the mucous membrane of the uterus by which air or gas is produced, or which is more likely the result of some decayed substance, such as retained menstrual blood, fetus, portions of placenta, intrauterine growths, etc. Whether the mucous membrane can secrete gas is a question of which this author is not satisfied. In support of the affirmative side of the question, which has been held by a number of distinguished physiologists, the liberty is taken of introducing a case which occurred within the observation of my friend Dr. J. H. Kidder, U. S. N. In answer to a note requesting information, he sent the following reply:

MY DEAR DOCTOR:—The case referred to in your letter of the 24th occurred in the practice of my friend Dr. Kite, of the Fish Hawk. I was called about one o'clock in the morning, and found a stout and well-developed young girl, about sixteen years of age, apparently unconscious and throwing herself about on the bed in a very violent way. She would spring from a position of complete opisthotonos, resting only on her heels and the back of her head, to a sitting posture, with her head bent far over the toes; make loud out-cries, and behave generally in a very unruly way. Her tongue was heavily coated, pulse sometimes full and strong, sometimes so feeble as to be scarcely perceptible. The remarkable feature to which you refer was extreme distention of the abdomen, occurring with extraordinary suddenness, and so extensive as to threaten suffocation. When so distended, the abdomen was universally tympanitic from the scrobiculus to the pubes. I could not detect her in the act of swallowing air. This tympanitic state was accompanied by the small pulse already referred to, and was relieved, after a time, by copious eructations and the passage of borborygmi.

Upon examination, I found no hymen, decided but not extreme

vaginismus and induration, with apparent elongation of the cervix. The diagnosis of hysteria was confirmed by a history, afterwards obtained, of imprudent exposure during a menstrual period. The girl had been paddling in water with bare feet, and during her last turn had been sent to visit the relatives with whom I found her on account of subsequent illness, during which she had complained of much pain in the loins and had had fever.

Dr. Kite had treated her successfully for constipation, and had exhausted the pharmaceutical resources of the Fish Hawk in his endeavors to get rid of the hysterical condition. We sent to the nearest town and got some valerian and asafetida (for enemata), by aid of which the tympanitic condition was relieved and did not recur thereafter under my observation. Thirty-six hours after my first visit, and not long after the administration of the asafetida enemata, her menses returned, imperfectly. Her relatives were also instructed as to the importance of moral measures, and the evils of too much expression of sympathy.

At the time of my examination, the cervix was not particularly sensitive to the touch, nor was the os patulous. The development of gas could not have been physometra in a virgin uterus, nor could I detect any movement of swallowing during its onset. The odor of the gas, when discharged, did not indicate decomposition or fermentation within the alimentary canal.

I am constrained to believe that in this instance it was secreted by the intestinal glands.

Truly, your friend,

J. H. KIDDER, *Surgeon U. S. Navy*.

Having related all the cases which have seemed to support the theory that air or gas may distend the uterus independent of retained products or menstrual secretions, it is but fair to show the reverse of the shield, and no remarks which the writer has studied seem so appropriate as those from one of the fathers of American obstetrics, the late Dr. Chas. D. Meigs, one of the most able and well beloved of physicians, a teacher whose precepts have been embalmed in thousands of medical hearts, not only in this country, but abroad. His article on the subject is so forcible, and the style so quaintly original that it is given in full.

“GENTLEMEN :—If you will look into the books, or listen to the relations of your patients, you will perhaps be led to believe that the womb is occasionally to be found distended with air, which, after having caused it to expand until it attains the size of a womb six months gone with a child, more or less suddenly escapes, whereupon the signs of the woman’s pregnancy disappear, to the great astonishment of the hopeful patient, as was the case in the celebrated instance of Mrs. Commodore Truncheon, of whose baby the author said it vanished. “*tenues in auras*.” These ventose pregnancies are nonsense, and no thoroughly-bred and close think-



ing physician ought to be for a moment misled by such a story. It is against physiology, it is against pathology, and it flies in the face of common sense to talk of collections of wind distending a material like the womb, a material which creaks under the edge of the bistoury, and expanding like a normal ovum whose gentle slowness of growth is the sole reason for the deployment of the gravid uterus.

Air is too subtle to remain quietly locked up in an elastic bottle that has no cork in it ; Don Cleofas was obliged to help Asmodeus out of the phial into which he had been conjured by the magician, and you all know very well there is no womb into whose cavity you could not trust a large quill or womb sound ; then is air to remain in the womb, and blow it up like a freshman's football, not only against the resistance of the womb itself, but against all the succussions of the abdominal muscles and diaphragm, and the resistance of the skin of the trunk of the body to boot ! It is an idle conceit.

What ! Is there no such thing then as physometra and tympanites uteri, or a discharge of wind from the womb ? Has it never been heard ? Yes, I have heard it many times, both in childbed women and in others. Yet, I repeat that inflation and distention of the womb with gas, the ventose pregnancy, the pet vaginal, are not diseases, but pure accidents. Madam Boivin and M. Dugès, at page 134, say : ' We have never known the existence of an *aëriform* body in the uterus, except in obstetric cases, as in retention of the membranes, or of portions of the dead fetus, or of putrid coagula, causing gaseous exhalations, found in the uterus after death, or escaping per vaginam during life.'

Let me explain this matter to you ; for I cannot patiently endure to think that a pupil of mine, be he settled in Maine or Wisconsin, at the Sault St. Marie or Monterey, should admit to a patient that the womb can become filled and distended with gas as a result of diseased secretion ; for such secretion is impossible, and to admit it is ridiculous.

Dr. F. Ludwig Meissner, in his great work on diseases of women, *Die Frauenzimmerkrankheiten*, treats, at page 97, vol. ii., of physometra, and he says expressly : ' So kommt auch nur dann eine *Pneumatosis uteri* zu Stande, wenn durch Verschliessung des Muttermundes der Abgang der in der Gebärmutterhöhle sich ansammelnden Gase gehindert werde.'

Dr. Meissner devotes many pages to show that flatus uteri may be produced by gaseous secretion, and that a variety of causes, such as remnants of ova, coagula, etc., are the causes of it. I cannot, however, bring myself to his way of thinking upon these points, and prefer to rely upon the clinical experience, and the reasonings that are personal, than upon the reports of others whose facts I receive, while I adhere to my own explanation of those facts. Dr. Hohl, *Lehrbuch der Geburtshülfe*, p. 337, says he has no knowledge of physometra in pregnancy, and does not believe in it.

I have often noticed the discharge of large quantities of gas

from the genitalia of sick women. A woman when seized with her last labor pain, and, bearing down with great violence, shall thrust, not the child only, but the placenta also, forth upon the bed; and in bearing down with the violent force of the labor-tenesmus, she will push the very womb itself to the bottom of the pelvis, shortening the vagina in so doing, wrinkling and crushing it down to the os magnum. As soon as the tenesmus is over, the resiliency or elasticity of the tissues recovering its power, the womb rises again to a certain height within the excavation of the pelvis; but, as it is a cul-de-sac that rises, it is natural for air to follow it, and the vagina, and the womb itself, may thus contain air that has been drawn up within them, upon the same principle as that which makes it follow the upward movement of a piston in a cylinder. Then comes a new pain—an after-pain—or else I apply my hand to the hypogastrium to make sure of a good contraction of the womb. If I compress the womb with my hand, and particularly if I push it downwards in the pelvis, I am very apt to cause a quantity of air to rush out at the ostium vaginæ with considerable noise. This I have heard a great many times. So, in making the examination per vaginam, when the uterus is very low down, or when, in making use of the speculum, I push the os tincae far away from the os magnum, air enters the passage, and follows the retreating womb. If it be left there, and the woman is seized with a fit of coughing, or if she moves quickly, or changes her position, the air is pressed out with the sound of the pet vaginal.

And there is no other way to account for it that is reasonable. So also, if a woman has a heavy womb with a large loose vagina, when she lies on the couch or bed, the uterus retreats, as La Motte says, drawing air after it; but if she rises, or coughs, or turns, the air is expelled. These occurrences give you no colorable ground to suppose that she secretes air from her genital mucous membrane. Did you ever hear of air being secreted by the bladder of the urine? Never. Air is not secreted. The bubbles of it that you see upon the skin are not bubbles of secreted air; they arise from the vaporization, or from the transformation of fluid products on the skin.

If a woman sends for you, with a distended abdomen, with suppression of her catamenia, and other signs of pregnancy, and complaining also of the pet vaginal, I pray you be not so foolish as to tell her that her womb secretes air, for it does not.

Auscult the patient, and percuss the abdomen, and explore it by means of palpation, and, if she be not pregnant, you may say she has a tympany, or ascites, etc., but do not say she has a flatulent womb. I would as lief hear you had told her she has a flatulent right ventricle of the heart or ventricle of the brain.

If, as Madam Boivin says, there be a putrid placenta corrupting and rotting within a lately delivered womb, or lying in the vagina like a huge putrescent tampon, you would not be surprised, upon taking it away, to find it followed by a gush of foul air, which, it is said, has even been found to be inflammable. In extracting

the putrid placenta, I have had not only to submit to the horrible offence of this putrid blast from the womb, but I have found the decaying mass of the after-birth crepitating under my hand like a piece of putrid emphysematous lung. But in these cases the passage has been closed by the decaying mass, and you might suppose that a very firm clot, or a quantity of chorion and amnion, left in the womb after labor, might in like manner so shut up and close the orifice as to detain within the globe the putrid or other gases formed or extricated by putrefaction.

It might possibly happen that an ulceration of the canal of the cervix, with luxuriant granulations, should shut up the mouth of the womb, and that some of the fluids detained above the obturation might extricate gases; but that they could expand the uterus so as to make it as large as the womb at five months is what I cannot conceive of; and if, like Frank, if I should meet with such a case I should not believe it. I would much rather believe I had made a mistake in my diagnostic.

A woman might well have an escape of air from the os uteri who had utero-rectal fistula, a thing quite possible after the adhesion of the utero-rectal peritoneal cul-de-sac.

Well, then, as I do not believe in the physometra as a disease, but only as an obstetric accident, I have nothing more to say about it, except that, when your patient complains of it to you, and is disquieted and alarmed about it, I hope you will make her understand that she is not the subject of any sickness, but only of an accident."

It is hardly necessary to discuss Dr. Meigs' statements, as it is thought they have been fully answered by the reports of cases given. In fact, careful scrutiny of the paper will show that in some instances there are manifest contradictions; for an admission that decomposed material may swell up the uterus would disprove the elastic bottle theory, and it is presumed no one will venture to assert that a goose quill or probe can be passed into all uteri. The doctor admits that an ulceration of the cervix with profuse granulations might shut up the mouth of the womb, and this undoubtedly was the cause of the physometra, the history of which forms the basis of this paper. The following cases are related in support of Dr. Meigs' statement regarding the indrawing of air during labor.

The first, by Dr. C. G. Strohecker, is in *Northwest. M. S. J.*, Chicago, 1854, n. s., xi., 138.

Woman delivered of a small male child, but the uterus still remained large, and the doctor announced twins, removed the placenta; abdomen still large. Waited two hours, and then passed hand to vagina and two fingers into os; gush of air, and



no twins—noise heard all over the house. Abdomen became relaxed and uterus contracted.

Good recovery. This was probably a case in which air had been sucked up into the vagina and uterus at some time during the progress of the labor.

Staudé also, in *Ztschr. f. Geburtsh. u. Gynäk.*, Stuttg., 1878, iii., 191–240, reports a case entitled “Ueber den Eintritt von Luft in die Gebärmutter im Verlauf zögernder Geburten und intrauteriner Fruchtfäulniß.” (Entrance of air into the uterus, in the course of a delayed labor with intrauterine decomposition of the fetus.)

The details are hardly sufficiently interesting to reproduce. Another cause of entrance of air into the uterus may depend upon a partial inversion of that organ, especially in cases where the placenta is adherent. Such a case is related by M. Lemaistre in *Bull. Soc. de méd. et pharm. de la Haute-Vienne*, Limoges, 1868, ii., 101–103, entitled “Pénétration d’air dans l’utérus à la suite d’un renversement probable de cet organe.”

Patient strong and muscular, primipara, fell in labor, and when the doctor arrived face of fetus presented at the vulva, chin underneath symphysis pubis. After waiting a considerable time and the birth not taking place, the forceps were applied to facilitate extension, and it was found that the fetus appeared to be withheld, and when the forceps were taken off the head appeared to be drawn towards the mother even after the head was born. It was found that a loop of the umbilical cord was wound around the neck of the child; this was removed, and the child delivered. The cord was cut, and to the doctor’s surprise he heard a sound as if air was being engulfed by the uterus through the external genitals, and at the orifice of the vagina it was similar to the sucking sound made when air is drawn through the partially closed lips. The aspiration continued for some time, at least ten seconds, and ceased when pressure was made over the uterus by the midwife. Believed it was due to partial inversion of the uterus produced by the traction of the cord which had, when cut, permitted the upper part of the uterus to replace itself. Placenta retained. Good recovery.

Dr. F. Winckel also gives reports of three cases in *Berl. klin. Wochenschr.*, 1864, i., 89–91, entitled “Ueber das Eindringen von Luft in die Gebärmutter im Verlauf zögernder Geburten.”

First case. Entrance of air into uterus delayed labor.

Second and third cases. Decomposition of fetus.

In further support of Dr. Meigs, Boivin and Dugès, in their "*Maladies de l'utérus*," 1833, i., 134, state, as Dr. Meigs says, that they have never seen a case of physometra except under the circumstances mentioned, but they cite several authorities who state that cases have existed (Madame de la Chapelle, Frank, and others).

L. A. Becquerel, in his "*Maladies de l'utérus et de ses annexes*," 8vo, Paris, 1859, ii., 97, denies the possibility of physometra occurring except after gestation. Thinks that a gas sufficiently strong to dilate a womb could overcome the resistance of a closed cervix. Does not believe it, notwithstanding the statements of Mauriceau, Baudelocque, Lisfranc, and others.

Dr. Robert Barnes, in his "*Medical and Surgical Diseases of Women*," 1874, 85, speaks of physo-hydrometra as a post-puerperal condition depending upon the retention of some portion of the placenta or membranes, and the admission of air into the uterine cavity.

T. Spencer Wells, in his "*Ovarian and Uterine Tumors*," 12mo, 1882, 106, alludes to tympanitic and phantom tumors, but ascribes them to intestinal and not uterine distention.

In a recent work by Dr. A. W. Edis, "*Diseases of Women*," 1832, 311, he simply defines physometra as an "accumulation of air in the uterus" of very rare occurrence in hysterical women. He states that air is not unfrequently discharged from the vagina.

In the investigation of the subject of physometra many interesting cases have been found where dilatation of the uterus has taken place from decomposition of the menstrual fluid, and a review of the whole matter would hardly be complete without recording a few of these cases.

One of the most characteristic is related by Dr. J. Jones, entitled "Accumulation of air in the uterus, simulating pregnancy," in *Lancet*, Lond., 1834, ii., 355.

A patient, nineteen years of age, unmarried, came with her mother, who stated that her daughter's health had been delicate for some time, and that she suspected her of pregnancy. She had had frequent vomitings, in the morning, anorexia and consti-

pated bowels. She attributed her illness to a cold while menstruating six months previously; catamenia had not appeared. About three months after this period she perceived her abdomen enlarging and it had progressively increased until when the doctor saw her she was as large as a female in the seventh month of pregnancy. The uterus was felt to reach as high as the umbilicus. The stethoscope was applied, but no sounds heard resembling placental or fetal pulsation. A vaginal examination was positively refused. In three days the doctor was again visited by this patient, and to his amazement found her to be of natural dimensions, uterus could no longer be felt above the pelvis, and she seemed to be in much improved health. The doctor then states as follows: "The account she gave was that, on going to bed the first night after she applied to me, she suddenly, to use her own expression, felt something burst in her inside, and instantly a profuse quantity of extremely fetid gas issued from her vagina, mixed, however, with a few small clots of blood. The flatus, she said, must have continued to discharge for at least two minutes, when she became faint, and subsequently insensible. The mother corroborated the daughter's statement, and said that the fetor of the gas was so intolerable that she could not remain in the room with her. The doctor suspected an abortion and succeeded in getting a vaginal examination, when he found the vagina entirely closed by the hymen, with the exception of a small orifice not half an inch in diameter, through which the catamenia had escaped, a strong proof that she had not indulged in illicit intercourse. She recovered.

In this particular case there seem to be no facts to warrant the assumption that the cervix had been closed by disease, and the elastic bottle theory must necessarily fail.

Another interesting case is recorded by Henning, in *J. d. pract. Heilk.*, Berl., 1817, xliv., 40-51, entitled "Eine Windsucht der Gebärmutter" (Tympanites of the uterus).

Age 44, widow eighteen years. Had catarrh and rheumatism. Great nervous irritability. Had a good deal of cough which produced pain in lower part of abdomen. Had attack of fever with pelvic pains; suffered four weeks and then got better; sent for doctor and complained of a terrible swelling of lower abdomen, which was burdensome but not painful. Had menses few days previous, but never before such flow or swelling. The discharge was not as bright red as formerly, but dark red and clotted with mucus, stinking. Produced burning of the genitals, which had to be washed. Never had had children. Said she always had a heavy feeling before her menses, with swelling; could move a tumor to and fro; was obliged at this time to draw her water, which did not relieve her. Abdomen was examined, but could detect nothing but a large elastic swelling of the abdomen in the inguinal region; a pasty, pulpy mass was felt. Suspected a hydrometritis, and suggested a vaginal examination. Nothing discovered in va-



gina and could not deliver what was in the uterus, whether a watery mole or air. Supposed from hardness of cervix commencing cancerous growth. Put on a tonic and alterative course, and the menses changed for the better. Had an attack of colic some time after, with belly much distended; different remedies were given and she improved temporarily only. Got on her belly on one occasion to relieve pain and suddenly a loud passage of air came from the vagina, which was very malodorous. The doctor asked her to repeat the experiment, and placed his hand in front of the vagina to catch the wind. To his surprise a large quantity of stinking gas came from the genitals, which was so forcible that he distrusted the evidence of his senses. Repeated experiments proved it was from the genitals. Air came from the uterus when the finger was pressed into the cervix; the walls finally collapsed. Patient got well after this. Menses never returned.

Roustan reports a case of physometra in the *Montpel. méd.* 1882, xlix., 339-348.

Patient aged 37. Had leucorrhœa after two miscarriages. Had loss of blood and was attended by Roustan and got well. Os not open. One month afterwards she declared she was pregnant, as she felt all the symptoms of previous pregnancies. Three months after she confirmed the statement as to her believed pregnancy, but fifteen days afterwards, as she was getting out of bed there was a noisy escape of gas. Her husband heard the noise; she felt some pain and went back to bed and passed fluid like washings of putrid flesh. They supposed the fetus dead. The breast and other parts like those of a pregnant woman. Uterus as large as at five months, and rounded. On percussion a hollow sound was produced. After passing in a sound a large escape of gas took place; tumor disappeared; returned partly the next morning and was again let out. Caused by a hypertrophy of the mucous membrane producing a small bleeding tumor, which was removed. He concluded that the decomposition of blood produced the gas. He relates also another case in which decomposition of the fetus produced a large quantity of gas.

Kux also relates a case of tympanites uteri, in *Org. f. die ges. Heilk.*, Aachen, 1852, i., 92.

Age 40; nullipara; menses ceased for four months; uterus swollen like one of five months. Diagnosis, no pregnancy after a careful examination. Husband came to see doctor and said that fourteen days after his wife had seen the doctor a large discharge of stinking gas came out, and the pregnancy was at an end.

The next class of cases which are equally instructive and interesting are those in which the physometra has occurred during or subsequent to pregnancy. A number of examples

have been found and a few are here given to make the record complete.

Dr. Septimus Wray, in *Lancet*, Lond., 1827, xii., 396.

Married; thirty-one; pregnant. Very nervous during her pregnancy from reading medical books. Called to see her on the evening of Monday, at seven P.M., and about two hours after, at the commencement of each pain, a considerable amount of air was passed with a gurgling noise, which the doctor said would probably be relieved when the bowels were opened. She answered that she feared he was mistaken, as it came from the womb. He attached no importance to this statement, having never met with such a case, but found on making a digital examination of the os that such was the case, but thought there was no fetus. The lady affirmed that she felt the child move so late as twelve o'clock, being three hours after the air began to pass. The mouth of the uterus was slowly dilating all the time, pains regular but not strong. On Wednesday feverish symptoms occurred and the passage of air continued. A consultation was held and she was bled freely. Was called in the evening, and was shocked to find the patient in a wretched condition, bed clothes were raised to a considerable height by the extreme distention of the abdomen from the inflated state of the uterus, which was caused by the head of the child having descended to the os externum, where it completely plugged up the passage so that no air could escape. The child was now evidently dead. This appeared probable from the emphysematous state of the scalp and the fetor which proceeded from the vagina. In a note Dr. Wray adds: From the appearance of the child after delivery. I should say there is doubt that decomposition was beginning. The protuberance was, however, far too inconsiderable to account for the gas in the uterine cavity: the common integuments were generally of a dingy complexion with a leaden tint, not unlike that observed in children laboring under convulsions, and on the whole it had the appearance of a fetus dead in utero but a few hours. A consultation was held and the lady delivered with ease, when a great rush of air took place, estimated to be at the very least about two gallons. After this she felt comfortable. The hand was introduced and the placenta removed, no contraction of the uterus took place, and she died within an hour of hemorrhage.

In this particular case it is likely that the accumulation of the gas in the uterus might be due to two causes, decomposition of the fetus and an indrawing of air through the vagina.

Dr. G. S. Bedford, in Nelson's *Northern Lancet*, 1852-3, vi., 224-226, reports a case of physometra of the womb.

Age thirty-two; married; mother of seven children. Last child born dead; had been dead some time and was probably decomposed. Enlargement commenced eighteen months since, and she has not seen menses since birth of last child. Enlargement of abdomen

very like enlargement of pregnancy, sound on tapping resonant, not dull. Tumor never gets smaller which would be the case if due to flatus. Dr. Bedford thought the physometra was due probably to a retained portion of the fetus or portions of placenta. Recommend evacuation of the gas and pytalism. No subsequent history of the case.

Dr. H. G. Taylor, in Tr. N. J. Med. Soc., 1861, 105, relates a case of the head being forcibly expelled by gas in the uterus.

Negro woman in labor two days. Gas produced by decomposition of child. Loud report and head was expelled. Gas offensive.

Dr. Thos. D. Kennard in *Humboldt M. Arch.*, St. Louis, 1868, ii., 1-5, records a case of physometra.

Woman had been delivered in an abortion by midwife, who left behind a portion of placenta which Dr. Kennard removed. This was on July 6th. On the 12th it was noticed that the abdomen was much distended and it increased so much in size that a thorough examination was made. It was feared that the uterus itself was enlarged, and on passing the finger into the cervix it was found occluded with clots of blood, which, when removed permitted a quantity of fetid gas to pass out. A portion of decomposing placenta was also removed and the womb gradually regained its normal size. Patient made good recovery. Produced evidently by decomposition of retained placenta and clots of blood.

Dr. James N. McDougal, in the *Edinb. M. J.*, 1880-1881, xxvi., 407-413, furnishes notes of a case of physometra.

Saw case in June, 1878; had had several miscarriages, considered herself between six and seven months pregnant, had morning sickness, enlarged and painful breasts, and the abdomen had progressively enlarged. At the fifth month she distinctly felt life. For six or seven years had been much of an invalid and for the last six weeks had a slow fever. Examination revealed an abdomen very much enlarged, extending above the umbilicus; tumor oval, hard, firm, and well defined. Percussion elicited a clear tympanitic sound over the entire surface. No fluctuation. No placental or fetal sounds heard. Vagina dry, cervix nearly effaced, firm and dry without the moist pulpy feel of pregnancy. A bimanual examination proved the uterus light but enlarged. Os was dilated sufficiently large to admit the point of the index finger. Sound would not pass the internal os which was strongly contracted. Patient was put under chloroform and then the sound slipped in without difficulty. This was followed by the instant rush of pent-up air as if from a punctured bladder with a distinctly audible whizzing sound. Gas frightfully offensive. Was obliged to chloroform and use the sound twice and then a rubber catheter before all the air was expelled. Uterus regained normal size. Sponge tent was introduced. Next morning found uterus again



enlarged, and after dilating the os discovered in the organ parts of a decomposing fetus. Patient had a spurious pregnancy afterwards.

H. Stahl, in an inaugural thesis entitled "Ueber Tympanites Uteri während der Geburt," published at Halle, 1872, states as follows:

Physometra recognized by ancients who made many allusions to it; of course, there may have been many sources of error. No trouble to account for air in the uterus during birth. He describes a case of stinking gas in the uterus which was observed by Prof. Olshausen.

Nov. 24th, 1866, Prof. O. was called to attend a thirty-year-old primipara. She had learned to walk late, she denied having been bow-legged. According to her account, after being in pains two days, the pains were worse at noon Nov. 24th, and at 2 P.M. water began to flow and was still flowing. Abdomen was swelled up, the fundus of the uterus being directly under the end of the xiphoid cartilage. The tumor was pyriform in shape. Had on the right side much hardness, on the left much liquor amnii. There was a child in the uterus, head projecting. After some hours of labor the uterus increased in size and pain ceased, air in uterus diagnosed, percussion gave tympanitic sounds. Delivery was attempted with the forceps which when closed forced a dirty brown fluid from the uterus. The child was delivered after craniotomy with the forceps; while this was being done gusts of air escaped from the vagina. Required three-quarters of an hour to deliver child, after which a quantity of stinking gas escaped. Patient recovered. Gas during labor not uncommon.

The writer is at a loss to imagine why Stahl should have mentioned the fact that the patient denied being bow-legged.

Dr. A. Valenta, in the *Wchnbl. d. k. k. Gesellsch. d. Aerzte in Wien*, 1857, iii., 113, 133, relates a case entitled: "Ueber Tympanites Uteri."

This is a case of tympanites in a country woman, forty-three years old, who was brought to the hospital during her twelfth delivery, after having suffered from malpractice. Diagnosis:—Constrictio spastico-inflammatoria, putrescentia and tympanites uteri, caused by breast presentation of a fetus in the highest state of decomposition.

Patient having been put under the influence of narcotics, the fetus was lifted, in order to facilitate the escape of the gas, which took place with a loud noise, and was accompanied with a putrid fluid and a horrible smell in which sulphuretted hydrogen strongly predominated. The fetus was removed after great difficulties. The woman died the following day from violent peritonitis.

Speaking of the etiology of tympanites uteri, the author concludes that the existence of this disease presupposes two conditions: 1. The presence of some decomposing substance in the cavity. 2. An impediment to the escape of the gases of decomposition.

These two conditions exist during menstruation, pregnancy, birth, and childbed, and that tympanites most frequently occurs during these periods is a direct proof of the correctness of this conclusion. There exists only one kind of tympanites, *i. e.*, tympanites putrida.

The so-called hysterical tympanites is founded on delusion. Do not women in confinement maintain that they feel wind escape through the vagina, when this feeling is nothing but a deception founded on the extension of the rectum, and its influence upon the very excitable vagina? If gases really escape in this manner, the cause of this may be found in an unrecognized fistula recto-vaginalis. If external air is liable to enter the uterus, would not the application of the speculum give opportunity for it? There is only one occasion when atmospheric air could enter possibly the uterus, and this is during birth.

Dr. Friederich Weber, in *Allg. med. Centr. Ztg.*, Berl., 1869, xxxviii. (72 St.), 853, records a case entitled: "*Physometra im Puerperium*."

Case of wind in uterus; supposed adherent placenta. Stinking discharges. After eight days of collapse with a resonant uterus enlarged to above umbilicus. Index shoved into cervix which was dilated, then came a rush of fetid gas, probably due to a portion of placenta or blood retained. Writer says, however, no such substances were found. Got well.

Those who are anxious to study the subject still further are informed that:

Dr. Heinrich Fasbender, in an Inaugural Dissertation, 8vo, Berlin, 1865, entitled: "*De aeris in uterum parturientum et puerperarum introitu*," devotes considerable attention to histories of gas in the uterus during labor.

For further accounts of wind expelled from the uterus and vagina, a list of authorities is here given:  
*Zeitschr. f. Geburtsh. u. Gynäk.*, Stuttg., 1880, v., 141.  
*Org. f. d. ges. Heilk.*, Berl., 1857, vi., 147.

- Arch. f. Gynäk., Berl., 1873, v., 159.  
Med. Cor.-Bl. d. württemb. ärztl. Ver., Stuttg., 1882-3, i., 161.  
Rust's Mag., 1825, xx., 550.  
J. de méd. et de chir. prat., Par., 1877, xlviii., 498.  
Tr. Obst. Soc., Lond., 1863, iv., 173.  
" " " " 1871, xii., 281.  
Am. J. M. Sc., Phila., 1854, n. s., xxviii., 370.

The end has now been reached of what the writer fears has been a somewhat tedious paper, but he trusts that the comparative rarity of cases such as he records, and the important nature of the subject may serve as excuses for taxing the patience of readers to such an extent. Had time permitted, perhaps a further search in obstetric and gynecological literature might have given additional facts with regard to physometra; but inasmuch as the entire library of the Surgeon-General's office has been laid under contribution, it is hoped sufficient material has been gathered to call attention to the subject, and lead to further observation. He must apologize also for having in his translations from foreign writers sacrificed elegance to brevity, desiring only to give the salient points in each narration of cases. In the preparation of the paper, the writer has received much assistance from his son, John Yarrow, student of medicine.

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#### A CASE OF OCCLUSION OF THE VAGINA COMPLICATED BY PREGNANCY.

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BY

EDWARD CROSS, M.D.,

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DURING the past summer, a medical friend referred Mrs. H. to myself with a request that I should take charge of her case. She gave, in brief, the following history: Age, twenty-four; married four years; during first year of married life gave birth to a large male infant, weight stated to have been twelve pounds. The labor was tedious, continuing through three days, a midwife (backwoods) being in attendance. A physician was finally called, and completed delivery by the aid of forceps. Convalescence was tardy, was confined to bed for two or three months, though she got up comparatively well, with the exception of being unable to



control flow of urine, which constantly dribbled from the vulva. This continued for some months, and finally ceased without treatment. She considered herself well until, from an attempted approach of her husband, she found that (to use her expressive language) "the place was grown up." A physician in Canton, Miss. (where she then resided) was consulted, and attempted an operative procedure, but for some cause abandoned the operation, Mrs. H. stating that he said he had cut in the wrong direction, but he assured her she could be relieved. After this, she again suffered from dribbling urine for a few weeks, again to be relieved of this troublesome symptom by nature, it ceasing in a short time, and she regaining perfect control. Indeed, she assured me she could retain her water six or even ten hours without inconvenience.

She was now, when first seen by myself, between three and four months advanced in her second pregnancy. The wonder was how the apple got in; next, how was it to come out. Both she and her husband were much concerned, and had determined upon abdominal section as the only hope. Placing her upon a table, and exposing the vulva, the ostium vaginae seemed perfectly closed by a dense cicatricial tissue. No entrance could be found but the meatus, until the parts were put upon the stretch, when a small orifice just below the meatus was discovered through which I could force a small uterine sound. Another sound was passed into the bladder through the urethra, the two meeting in the vagina, disclosing a large vesico-vaginal fistula, and that the occluding cicatricial membrane was only about one-fourth of an inch in thickness. Evidently, a slight slough at time of confinement had set up adhesive inflammation to an extent to unite the walls of the vagina, as the head had impinged upon the vaginal tissues for some hours before delivery was accomplished. The uterus was found free, and in normal position; not lacerated. I should have stated, in giving the history of this case, that Mrs. H. had, up to the time of her second pregnancy, menstruated regularly, suffering no inconvenience. Her husband informed me that she was passionate, and seemed to enjoy his efforts at coition. After examination, Mrs. H. was informed that she must at once be placed under treatment, that an operation, dividing and keeping separate the occluding membrane, would be necessary, to which advice she yielded a hearty consent, and left my office to make arrangements for board, etc. Notwithstanding this assurance on her part, she left the city that evening, and I heard nothing from her until near the time for her confinement, when her husband called to say that his wife was ready for the operation. She was now in her eighth month. Saw her at once. Found the condition of parts unchanged, except that the occluding tissue seemed to be much softened and somewhat relaxed. I determined to use dilators, as both she and her husband objected to cutting. A sponge tent, carbolized, was forced through the small vaginal orifice, and allowed to remain until fully dilated (six hours). Upon its withdrawal, the urine flowed freely through the opening. Another larger one was introduced, and thus on until I could use

my fingers, which I did twice a day, the parts, by tearing and partly from absorption, gradually yielding. Above this membrane, all was felt to be natural. The manipulation hastened the labor, and she was delivered without any great inconvenience of a male infant, which lived only a short time.

The main points of interest in this case are: That she could, with this condition of the parts, retain urine and empty the bladder at will, as she did; and most of all, that with the vaginal pouch as a common receptacle for urine, she should have become pregnant. Certainly the most available route for the spermatozoa was through the urethra, and then they must have taken a sail across a briny sea of urine to have reached the desired goal.

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ON THE EQUALLY FAULTY OR CONTRACTED PELVIS,  
WITH THE HISTORY OF A CASE OF LABOR, THE NON-DE-  
LIVERY OF THE CHILD, AND THE DEATH OF THE MOTHER  
AFTER CRANIOTOMY AND CEPHALOTRIPSY.

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BY

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THE unfortunate termination of the following case of labor, and the death of the mother undelivered after craniotomy and cephalotripsy, induces me to present its history, and to offer a few comments on the subject of faulty or contracted pelvises, including the equally contracted or *justo-minor*, the infantile or immature, and the masculine or funnel-shaped.

I am in full accord with the remark of a celebrated obstetrician, and realize fully its application: "That one does not feel much disposed to announce the failure of the delivery of his patient, though he is eager to do so when he is enabled to quit the field successful."

The history of this case was written by Dr. C. N. Greenbaugh up to the time I was requested to join Drs. Waterman, Judson, and another physician.

The patient was a healthy young woman, twenty-nine years of age; primipara; married not quite a year. A physician had seen her previously, but had left before I visited her (which I did at the request of Dr. M. W. Waterman, as his official public duties

did not permit his steady attendance), which was on July 28th, 1882, at 7 A.M.

I found her in labor, pains recurring at intervals of ten minutes, and being of short duration. The liquor amnii had escaped at 6.30 A.M. On examination, the os was found to be dilated to the size of a half-dollar, the head presenting in the left occipito-anterior position. As no advance had taken place at 11.30 A.M., I sent for Dr. Waterman. Ergot was given, producing but slight increase of the pains, and at 1.30 P.M., as no further advance had occurred, Dr. Simmons was requested to meet us, when (at 3 P.M.) one-third ( $\frac{1}{3}$ ) of a grain of morphine was given hypodermically. At 4 P.M., the patient was quiet and slept, the pains having ceased.

I then left, and did not see her till the next morning at 9.30 o'clock, meeting Drs. Simmons and Waterman. On examination, the os was found to be widely dilated. The head, recognized as before, was arrested at the brim. Forceps were advised, and applied by Dr. Simmons; no change or benefit resulting from their application, although all of us made an effort to deliver the head.

Dr. E. A. Judson was added to the consultation at 12 o'clock. Version was decided upon, and was attempted by Dr. Judson. A foot was brought to the brim, but could not be delivered, and it having receded, craniotomy was advised and done by Dr. Greenbaugh in the hope of saving the mother's life.

I saw the patient again at 3 P.M. of the same day, and found her somewhat exhausted, with slight, short, jerky, inefficient pains. Pulse 120; respiration normal. There was no tenderness of the abdomen, and she could assist in placing herself in position for delivery. The external organs were considerably swollen and slightly bluish in appearance. The vagina was edematous—so much so, indeed, as almost to preclude the necessary examination. There was no elasticity of the soft structures. The position of the head was now transverse at the superior strait; brow presenting; occiput to the left.

The perforation made was found to be through the frontal bone, near the supra-orbital plate on the right side, a portion of the right orbital ridge having been removed by the craniotomy forceps. Very little of the cerebral mass had escaped at this time, being prevented by the condition of the maternal soft structures.

Making no further investigation, I supposed from the history of the case that there was some defect in the pelvis, or, as was supposed by the gentlemen present, that it might be a very large child. The cephalotribe was applied, the handles brought in close apposition, and the brain more freely evacuated. Traction was then made for some twenty minutes, but nothing was gained towards the descent of the head, although the compression was to the extreme limit of the instrument ( $1\frac{1}{2}$  inches between the blades). Removing the instrument and examining, I found, as is not very uncommon, that the cranium had regained the same form it had previous to the crushing.



On account of the resiliency of the cranial bones, I applied my long, narrow-bladed forceps that I might inclose the head within the blades more perfectly than was possible with the cephalotribe. They were of value in bringing the head into the cavity of the pelvis, having a good and secure hold. This accomplished, the right-angled blunt hook was inserted into the child's mouth, and a frank face presentation made, so that we might bring the head obliquely further down. Meigs' "long embryotomy forceps" were then tried, and by steady, firm traction for half an hour, the head was brought to the inferior strait, and after three hours' time was delivered, face presenting, perfectly crushed. There was not sufficient space between the head and pubes to allow a thin towel to be put around the child's neck to be used as a tractor.

As no traction by the hands could effect the least advance of the shoulders, narrow but strong cord was placed around the neck, and traction made. A slight stretching of the neck was accomplished, and space enough obtained to admit of the introduction of the hand, in the endeavor to bring down the arm. After unavailing attempts to flex or alter its position, I found that it was impossible, so tightly were the shoulders wedged in the brim. After the introduction of the hand, I realized that the defect or narrowness of the pelvis was not at the conjugate, but that it was generally contracted, there not being sufficient space in the cavity to allow me to effect the slightest change in the position of the arm by any possible manipulation. The right-angled blunt hook was then applied, firm and steady traction made, but it was powerless to accomplish any alteration whatever in the position. This effort to deliver the body of the child occupied another hour. Hypodermic injections of whiskey were given to sustain the patient, but all our efforts failed, and she died at 7 P.M., thirty-six hours after I saw her.

The title I have selected for the remarks I propose to make on the naturally faulty or contracted pelvis, where the size, shape, and diameters do not correspond with those of the normal, may appear to be objectionable, as having no definite or specific character.

It is nevertheless a condition of the pelvis which F. C. Nägele has referred to, and which, from my own experience, is more frequently met with than is generally supposed.

These forms or classes of pelvis require as much attention and study from an obstetrical point of view as those which have claimed so much consideration, and which arise from constitutional disease, as rickets, malacosteon, or some systemic dyscrasia.

These forms of pelves give, as a general rule, no positive

evidence or even suspicion beforehand that a faulty condition of the osseous structure exists, and are often not recognizable till labor has commenced, and in many instances not until it is necessary to accomplish the delivery of the child instrumentally.

We recognize those pelves which are deformed consequent on disease by certain titles, which are given to indicate the special form or shape, as the simple flat, the figure of eight, the triangle, the transverse, the cordiform, the ovate, and the obliquely ovate. All these forms of pelves are considered as arising from constitutional disease. Rickets, as the most usual and frequent cause, affecting not only the pelvis, but also the spinal column and extremities.

The equally contracted or, as it is sometimes called, the justo-minor, the infantile or immature, and the masculine or funnel-shaped pelves are considered as caused by the arrest of development of the osseous structure, as the result of some important impairment of the constitution. The infantile or immature might appropriately be viewed in this light, but the funnel-shaped and the equally contracted, with few exceptions, give no evidence that they are of a rickety nature. The infantile, on account of the want of development of its osseous structure, is from that cause correctly and truly called an immature pelvis.

The funnel-shaped and the equally contracted are the very reverse, and are far from resembling the pelvis of the infant. The description given of these pelves testifies to this mistaken view.

The peculiarities attending the infantile, as the arrest of development takes place not before, but after the age of puberty, and the perfect development of the sexual organs, and before the sacro-iliac and pubic cartilages become ossified (?), have no special relations to a rickety constitution. There are cases where the bony union has not taken place until after the age of thirty or more years, and even instances where it has not occurred at all.

The male or funnel-shaped, or, as it is sometimes called, the Irish pelvis, is, on the contrary, the result of an advanced condition of ossification before the time of puberty, and illustrates a healthy constitution.

The equally faulty (even when the extremely narrowed pelvis measures an inch, or even if it is lessened to one-third or one-half inch in all its diameters) has no claim to be considered as an infantile or immature pelvis. Barnes considers that the equally faulty or justo-minor pelvis as a product of disease may be doubted. He thinks that the term justo-minor might usefully be discarded, but, nevertheless, informs us "that a proportionately perfect pelvis reduced in all its diameters must be regarded as an infantile pelvis, and that as its result the female is of small stature."

In my remarks I discard the so-called dwarf pelvis, "the pelvis nana."

The equally faulty pelvis that I have under consideration occurs in women well-formed in every respect, who, in contour of person, and physically, give no evidence of abnormality. It does not by any means follow that a female of small stature should have a pelvis too small for parturition. On the contrary, I have seen women of very short stature bear children easily, safely, and quickly.

An interesting case came under my observation, at Bellevue Hospital, in 1862, in a girl of twelve years, whom I found in the lying-in ward, on one of my visits, and who, when I requested her to leave the ward, informed me that she was "going to have a baby." On examination, I realized the truthfulness of her statement, and in less than an hour she was delivered of twins, weighing five and one-half pounds each. She had a most excellent "getting up."

Of the faulty condition of the female pelvis, which appertains to this class, very little has been and is said, and in all the latest works on the subject, with the exception of some German writers, there is only a mere reference that such a class exists.

The remark which was made by Stein, Jr., and by Nägele, more than half a century ago, "that the subject was scarcely considered worthy of notice by obstetricians," is as correct and true at the present day as then. Respecting the treatment, they say: "The obstetrician must help himself as best he can."

Velpeau informs us "that in a considerable number of women the pelvis of this form retains, after the age of puberty, the characters it had in infancy," and that "he had yet to learn that it had ever necessitated a serious operation." Velpeau, a



few years after this declaration, met with two cases which were published in the *Journal complémentaire*, and in which the pelves were so small that one woman died undelivered, and the other underwent the Cæsarean section.

The form of pelvis usually met with in this country, and in the more respectable class of society, is the simple flat non-rickety. It is to this form of naturally defective pelvis that the attention of the profession has been more particularly directed. But this form, not consequent on disease, is only occasionally recognized, even in the higher circles of society. The conjugate is seldom as low as two and one-half inches; generally, it ranges from three and one-fourth to three and one-half inches. How rarely, in this form, has craniotomy, much less cephalotripsy been performed? I have no hesitation in saying, from my own experience, that I have met more frequently in private practice with cases of a minor degree of equally faulty pelvis (from one-third to one-half inch) requiring craniotomy than of the simple flat non-rickety pelvis.

In almost all the cases recorded of the equally faulty or contracted pelvis where the diminution is from three-fourths to one inch, both mother and child are lost. In pelves of the same order, but of a minor degree (contracted from one-third to one-half inch), the child is generally sacrificed, unless it be very small. It is seldom born living at full term. The mother's life is also placed in great jeopardy, unless a timely operation be performed. An instance has been related where as many as sixteen children were destroyed in successive labors, each head being locked in the mother's pelvis, and which was just too small to allow of its being delivered.

In these cases, the difficulty is attributed to the large size of the child's head and its too advanced ossification, or it may be to very large shoulders, measuring twenty-one to twenty-two inches around, of which I have seen three instances; or, again, it may be that other causes produce the tedious labor.

I believe many cases of this nature have occurred which have not been recognized, which demanded not only instrumental assistance, but craniotomy and cephalotripsy, necessitating an operation which I think does not correspond to the magnitude of the evil when the pelvis is diminished only one-half inch.

Rokitansky considers that the smaller pelvis bearing traces of their growth having been arrested in consequence of rickets are at the same time misshapen or deformed.

Alexander Shaw, of Edinburgh, has been credited with saying, in his two most valuable monographs on the subject of rickets, "that proportionate contraction of the pelvic diameters is very common in rickety subjects consequent on a want of proper development, though not to constitutional disease." I have not been able to find this opinion of his in the two papers he published, one in the *Medico-Chirurgical Transactions*, vol. 17, 1832, the other in the *London Med. Gazette* for 1834. Shaw does say, however, that "in the infant the head, thorax, and upper extremities are usually more advanced in their formation than the pelvis and lower limbs. In the adult it is the very reverse. Should, however, from any such cause as rickets, the pelvis and lower limbs (through the general growth of the bones) be not increased rapidly, they will retain something of the infantile or immature character."

Now, rickets, as we all know and recognize, is essentially a child's disease. If in a young female approaching puberty, or at puberty, the general health becomes impaired, in which other structures than bone are equally affected, a question naturally arises whether the same causes acting at a later period of adult life may not so change the health as to produce rickets, and in this way establish "an arrest of growth or development." If such were the case, then rickety pelvises in these cases would become cordiform, and not oval.

Respecting the equally faulty or contracted pelvis, it sustains, like the other parts, a normal relation to the size of the body, and according to the development of the sexual organs and the female pelvis in strength, thickness, and texture, and the union of the bones to each other, having the same conformation of the straits and pubic arch, and do not differ from the healthy stature, as the subjects are sometimes taller.

It bears the type of a perfectly well-formed normal pelvis. From this circumstance alone it cannot be viewed as an arrest of growth or an immature or infantile pelvis.

It is a singular fact, but nevertheless true, that the influence of the pelvis upon labor was one of the last points to which the obstetricians directed their attention. It is natural to suppose

that so frequent and obvious a cause of difficult labor as deformity, greater or lesser, would not have escaped consideration. It is also natural, and absolutely necessary, that a just proportion and relation should exist between the pelvis and the body which is to traverse it. If these proportions do not prevail, and if the pelvic diameters are narrowed beyond a certain limit, there remain but two alternatives, viz.: either to diminish the volume of the child's head or body, or to cause a new outlet for its delivery.

Before the middle of the last century, there was scarcely any mention made of the subject. Fieldingould in 1742, Smellie in 1751, were the first to investigate the mechanism of labor, which was further elucidated by Solayres de Renhae in 1771. In 1780, Baudelocque the pupil of Solayres, gave more currency to his preceptor's views, though he did not recognize those relating to the Solayres obliquity of the head. At this period of time, the Sigaultian operation was under discussion (for symphysiotomy).

The discussion respecting the deformities of the pelvis took a wider range, and a more just estimate of this cause of difficult and tedious labor was entertained, erroneous views prevailed in regard to the passage of the child's head through the pelvis, which were of such a nature as to give rise to serious clinical results.

Stein, the nephew, but more especially the older Nägele (in 1822) contributed materially to change these mistaken and erroneous views.

Nägele's future experience and investigation on the obliquely ovate pelvis, as well as on the justo-minor pelvis, gave a new impulse to the study of those deformities which were due to defects in the conformation of the pelvis, but had no relation to constitutional or hereditary disease, as rickets, malacosteon, or scrofula, either of the pelvic region, vertebral column, or general diseases which are so easily and readily recognized in almost every case by prominent and suggestive indications.

Stein was the first to give (in 1825) attention to this subject, and he asserted that the equally contracted pelvis descends less below the normal standard than the pelvis by amplitude rises above it, that is one inch, while the extreme limit of the equally faulty or contracted pelvis does not exceed half an inch.



In 1830, Nägele, the elder, in his comments on this form of pelvis, differed from Stein, and he records in his paper three cases where the female pelvis, affected with this defect, presented no appearances whatever of a rickety change, either in strength, weight, or texture, one of them was even heavier than the normal, nor were there any symptoms of rickets in the history.

The diameters of the pelvis were also an inch less than the standard measurement. The ages of these patients were from twenty-three to thirty-two years (showing that the faulty capacity was an adult diminution or lessening) and they were all above the average height.

Two of the patients died after severe instrumental delivery, the third died undelivered of the second conception from rupture of the uterus, and a comparison of the pelvis with the child's head afterwards showed that a living child would have been impossible without the Cesarean section.

Busch, in the *Berlin Lying-in Hospital Reports*, Vol. xv., 1837, mentions three cases, two of which terminated fatally. The first was a presentation of the breech, the head was delivered by forceps, the child dead. The pelvis was contracted one-half inch in every diameter.

The second case was a head presentation, the child, delivered by forceps with the greatest efforts, was dead, the mother dying the next day.

The third case required perforation, forceps were first used, with considerable traction, the mother dying soon after. The diameters of the pelvis were found to be three-quarters inch below the normal measurement.

Mr. Lavalade in 1830 reported that a woman died of this form of pelvis at the Marseilles Maternity undelivered. In the Bonn collection there is a pelvis, the antero-posterior diameter of which is three and a half inches. In the cavity antero-posterior, three and seven-eighths, cavity transverse, four and a quarter, child delivered by forceps dead, the mother dying of eclampsia. In the cases reported by Heim, Korman, Spiegelberg, and others both mothers and children were lost. Velpeau's two cases were also lost.

The smallest diameter of any reported case was that of Nägele's patient, aged thirty-one years. The antero-posterior diameter was three inches; cavity, three and a quarter; outlet,

three and a sixth. Both mother and child died. This pelvis was perfect in every respect in the sub-pubic arch, the saccal curve, and the approximation of the ischia. The only fault was the non-union of the articulations. This pelvis might appropriately be called an immature pelvis.

My colleague Prof. Lusk reports in the *Gynecological Transactions* for 1879 an extremely contracted pelvis having a lessening of one and a quarter inches in the antero-posterior diameter, in the cavity one inch, outlet three quarters inch. The pelvis was of the feminine type, and well formed. There was, however, a slight synostosis of the left sacro-iliac articulation, causing a slight ovate obliquity. The mortality with this form of pelvis, where the diminution of the diameters is from three-quarters to one inch, is exceedingly great. It is as great as in the obliquely ovate, where the Cesarean section is so strongly advocated, and greater than in almost any other deformity of the pelvis.

It is not only in this great diminution in all the diameters that the mortality to the child is recognized, but it is also very marked in the minor degrees of one-third to one-half inch.

The death rate is two-thirds greater than in the simple flat pelvis. According to Löhlein, the fatality to the mother is 6.5 per cent. Litzmann says that in contracted pelvises, taken altogether, the death rate is only 2.22 per cent, that is two-thirds less than in the equally contracted pelvis.

From the report of Löhlein, it would appear that this kind of pelvis exists to some extent in Germany.

Possibly some of these cases were affected with some constitutional disease, as rickets prevails more in that country than with us.

I did not, however, meet with it in any of the cases which came under my observation.

To assert that rickets is the true cause of the arrest of development, by producing a want of perfect osseous union between the different pelvic joints, is, from the practical evidence presented, incorrect, and least of all is it the rule.

The immature, and the male or Irish pelvis, as it is sometimes called, is seen frequently among the Bethnal Green weavers of England. John Wood, of London, has recognized in the dissecting room the frequency of this naturally deformed

pelvis. Otto, in Germany, has stated, relative to its frequency, that in one winter he met with forty-five instances in the dissecting room, and that more than half of them should go to the museum. There is, probably, not one of us who has not seen illustrations of these different forms of pelvis.

These types are referred to, and spoken of by some authorities as the same form of pelvis as the equally contracted.

If, however, we examine anatomically these pelves in regard to their structure, texture, and conformation, we find that they are the very reverse. They are as different from the equally faulty as the simple flat, non-rickety is from the immature or funnel shape, which is the very opposite. In the simple flat, the conjugate is the only narrow part. In the immature and male, the conjugate is lengthened, and in the immature may become so long as in some cases to resemble the conjugate of a kyphotic pelvis,  $5\frac{1}{2}$  inches. The transverse diameter is narrower in the immature and male, while it is wider in the equally faulty and the simple flat. Physiologically we know that the transverse diameter does not, as a general rule, begin to widen till the period of puberty.

Both the immature and male pelvis become in form, shape, and appearance almost alike, but differ in size and weight, principally from the cartilaginous union of the joints in the immature, and in their premature ossification in the male. They are, therefore, entirely different from the equally faulty or contracted pelvis.

The preponderance of the conjugate—the narrow transverse—the contraction of the sub-pubic arch, and its length—the approximation of the ischial tuberosities, the deeper pelvis, and the narrow and straight sacra in the male—the shallow pelvis and wider arch of the immature, and its want of osseous union, shows the difference.

Now in all these different forms of pelves, although so perfectly distinct from each other, it is especially the cavity of the pelvis and outlet we have obstetrically to deal with, and not the conjugate, as in the simple flat, and its capacious cavity.

To recognize the difficulties which exist in this class of pelves, there are important indications to be considered.

1st. The position of the child's head at the superior strait.



2d. The caput succedaneum after the labor has existed some time.

3d. Corroborative proof of the form of pelvis by the shape of the child's head after delivery, if not perforated.

4th. Pelvimetry, external and internal.

The character of the pelvis might possibly in some cases be recognized during the first stage of labor, or, perhaps, not till the cervix was amply dilated, but no positive evidence of the faulty condition could be entertained till labor had progressed. More generally the true nature of the case is not realized till the application of the forceps, when we begin to suspect that either the child's head is too large and well ossified, or that there is some fault or defect in the conformation of the pelvis. It is considered far more difficult to ascertain the measurement of the transverse diameter in the cavity in these pelves, or any pelvis, than the conjugate in the other kinds of deformity. The measurement, it is true, cannot be made with perfect accuracy, but may be made sufficiently close for us to rely on its guidance. The shape and size may be surmised sometimes by the position of the child's head at the brim, and this will have important bearings on the nature or what type of pelvis we have to encounter.

1st. In the simple flat pelvis, the head is at the superior strait, transverse or slightly oblique, presenting by the parietal bone, either anteriorly or posteriorly.

In the immature and masculine, it is antero-posterior, and the occiput presents.

In the equally contracted it may be oblique.

In the normal pelvis, the head is more or less obliquely placed, and the whole vertex may sometimes be felt.

In the equally faulty, at the commencement of labor the occiput may dip and should, as it is the only favorable position for the child's head to enter the cavity of the pelvis, for flexion is absolutely necessary, and flexion as far as can be obtained, so that the smallest diameter, the trachelo-bregmatic, may terminate the labor, aided essentially by the flexibility of the bones of the child's head, and by their overlapping each other as far as nature will admit.

Flexion to the same extreme extent is not as requisite in the immature and male, for there is more compensation in the

antero-posterior diameter. In the simple flat it is the reverse as far as slight extension of the occiput backwards is necessary for the child's head to clear the promontory of the sacrum, by the temporal bone, as the narrowest or smallest part of the cranium.

Should complete flexion not take place in these faulty pelvises, the equally contracted especially, and the forehead dip, a brow presentation will occur, or what is much worse, a face, as happened in the case related.

2d. The scalp tumor by some authorities is considered a favorable indication, as it fixes the head in position at the superior strait. This tumor, however, may become so large and long as to fill the whole of the cavity of the pelvis and reach the vulva, and from its size and tension, feeling firm and solid, it may be mistaken, as it has been, for the osseous structure of the child's head. The tumor is thought to assist in the delivery by compressing in some measure the parietal bones. My own experience, on the contrary, is that it conduces indirectly to impair the soft structures of the mother, and to aid in prolonging the labor.

3d. After delivery, as a corroborative proof of the faulty condition of the pelvis, the cranium of the child, if it is born naturally in either of these kinds of pelvises, will indicate the nature of the pelvis we had to deal with.

The present specimen gives an excellent illustration of the equally faulty pelvis. The marked overlapping of the parietal bones over the occipital, frontal, and the smaller bones shows the great amount of compression the child's head has undergone, the strong and powerful action of the uterus that was demanded to complete the delivery, and the round and ball-like appearance of the cranium with its thin and flexible bones.

The measurements of the diameters of this specimen, as compared with those of an ordinary-sized head, are one inch less in the fronto-mental, three-quarters inch in the biparietal, and one-quarter inch at the base. The pelvis of the mother must have been more than one-half inch less in all diameters than the normal.

In a few instances of the funnel-shape pelvis, I have found that the parietal bones were compressed to two and a half inches by measurement, while the fronto-mental had been elongated seven or eight inches. One of these cases occurred in the wife

of a prominent clergyman in this city, and the head has not to this day recovered its natural conformation.

The flexibility of the bones of the child's head is in some instances exceedingly great, and should this condition exist, the child may be delivered naturally; if not, it will have to be sacrificed. I recall an instance of this marked pliability, where the child weighed over eleven lbs. The mother was of very small stature (four feet nine inches). Shortly after delivery, when the child was placed on the pillow, no matter on which side, that side of the head would be flattened, while the other side would retain its natural convex appearance. On removing the child from the pillow, the compressed side would recover its natural contour.

As a general rule it is with primiparæ that we have to deal. In multiparæ, the antecedents of the case will claim our attention, and we can select the proper time for the induction of labor, which I have known to be done at the seventh month.

4th. *Pelvimetry.* External pelvimetry will be of no value, and internal, either by the single, two, or four-finger methods, gives but negative information in these pelves. The examination by one finger, the usual way, can only be of value when the pelvis at the superior strait is much contracted, and it is then only possible that we may reach just below the promontory.

The two-finger method, by separating the index and middle finger internally, the tip of one finger resting on the promontory of the sacrum, and the other behind the pubes, is impracticable.

The four-finger method, as represented with the hand only partly introduced, is also insufficient, and it is only after some experience that such methods of examination can be of any value.

As the cavity of the pelvis is to be measured, and especially the diameter of the transverse, which is recognized as so difficult to obtain, it is necessary for the safety of the mother that the whole hand should be introduced to gain the required information which is to direct the further management of the case. It will depend upon the result of such an investigation whether we determine in a given case in favor of the operation by the forceps, version, craniotomy, the Cesarean section, or its modifications.

The conjugate diameter in these pelves it is not so imperative to ascertain, but, as I said before, it is the cavity of the



pelvis, and the inferior strait. When the whole hand is introduced into the cavity, the fingers should be carried above the superior strait, as is done in some cases when we desire to flex the head of the child or to effect version; then place the solid part of the hand in the conjugate diameter. Should the distance or space be longer than the measurement of the hand across the knuckles, the conjugate will be more than three or three and a half inches.

In the same manner, with the fingers partly above the brim, the transverse diameter is ascertained, if necessary by extending the thumb. Should the hand not come in contact with the sides of the pelvis, the diameter will be more than three and three-quarter or four and a half inches.

In a natural, well-formed pelvis or the simple flat, the hand can be introduced in the cavity, and easily rotated round, without much if any constraint or contact. Both hands must be employed, as the examination by one hand might mislead or leave the impression that there is no contraction or defect of formation of the pelvis.

The laxity of the vagina, as a general rule, and the other soft structures, and the moisture which attends the process of labor, will permit generally an easy examination to be made, under chloroform.

This is the method I have adopted in cases of this nature in preference to those methods which I have reviewed, as it yields a more satisfactory and valuable result. The measurements of the outlet in these pelves have been and are frequently overlooked. It is highly important that they should be known, as I have in several instances realized. The most useful, simple, and correct method is that of Breisky, measuring with the compass from one tuberosity of the ischia to the other, the patient being in the dorsal position, with the knees well flexed over the abdomen.

The unfavorable consequences attending the labor if it is prolonged, particularly in the equally faulty, involve the welfare of both mother and child.

From long and continued pressure, without any advance of the labor and with the child's head at the superior strait, most generally an edematous condition of the cervix arises, which may eventually extend to the whole of the vagina, diminishing the capacity of the pelvis so much as almost to preclude an

examination, magnifying the difficulty, and preventing the descent of the head, or dilatation of the cervix. Should the head of the child be completely covered by it, and partially engaged in the superior strait, the compression of the cervix by the head against the brim may be so effective and severe as to effect a complete circular amputation. We do not realize this fact till after the delivery of the child and the placenta, when the whole cervix is cast off, measuring from two and a half to three and a half inches. I have seen three cases of this nature. Sometimes there is only a partial amputation of the cervix.

Reversely, a trismus of the organ may ensue and become persistent, the cervix having receded or retracted over the child head, a stretching and thinning of the vagina ensues, exposing that part to laceration, or from the expansion of the isthmus, by the child's head, consequent on the non-dilatation of the internal os uteri, a thinning of the structure follows, and a rupture may take place. The upper part of the isthmus is the true muscular structure and is erroneously called Bandl's ring.

Indirectly a paresis may arise, and flooding follow, or a low grade of inflammation is lighted up, inducing a partial or complete sloughing of the vagina. The patient may collapse suddenly from shock, in consequence of the delay in the delivery, as in the case related.

These unfortunate and unfavorable symptoms may not ensue, provided the delivery is accomplished early. In a number of cases which have come under my observation, although the child was destroyed, the mother has fortunately progressed favorably, when the diameters were from one-quarter to one-third inch. In these cases, I have recognized that the occipito-posterior presentation prevailed more frequently than in well-formed natural pelves, and that the head of the child never made any rotation anteriorly, nor could. The left existed more than the right.

*Treatment.*—Considering the unfavorable aspect and the great loss of life to the mother in the equally contracted pelvis when the diminution is from three-fourths to one inch, and the total loss of life to the child (even when but a minor degree of lessening is recognized or from one-third to one-half inch) by instrumental delivery (craniotomy and cephalotripsy), and the strong probability, should the labor be allowed to reach

twenty-four or thirty-six hours, that the mother will also become a victim, it may be even after delivery—with these disastrous results from the usually adopted and sanctioned method of treating such cases, can we justly and conscientiously sanction the continuance of such a course? It is my belief, from the experience of many years, that the Cesarean section, some of its modifications, or symphysiotomy, even in the minor degree of one-half inch, should be adopted and sustained, as often as they are in the simple flat rickety or non-rickety pelvises of two and one-half inches, or even three inches, in the antero-posterior diameter.

In the higher grades of contraction (three-fourths to one inch), the Cesarean operation has only now and then been performed. Craniotomy and cephalotripsy have been and still are continued as the rule. A more disastrous presentation, by either of these operations, could not exist! Without the recognition of the exact state of the pelvis, the operator will only realize, when he comes to operate, that the delivery by cephalotripsy and craniotomy cannot be accomplished as easy as in a standard pelvis, but that it will require considerable time and expenditure of physical strength. The different instruments that are called for, and the great amount of patience that is needed, even though the head of the child may have been mutilated considerably, is great. The force that is used is spent almost unprofitably. It is a pure mechanical and physical display of power, possibly eventually to succeed. There is, however, a limit to both force and time, and that limit can only be recognized by experience, not by any fixed rule.

The treatment in regard to deformities of the pelvis in this city is more usually considered in relation to the simple flat pelvis. Rarely are other deformities seen or operated on.

In the ordinary simple flat non-rickety pelvis, which we notice in this city, the contraction is seldom, where no disease exists or has existed, below three to three and one-fourth inches, and the faulty condition is only in the conjugate, the cavity being ample. Version is more generally resorted to than the forceps, and as a rule the obstruction can be overcome after a short time, with the assistance of firm, decided, and steady pressure on the head by the hand over the pubis. The child can then usually be delivered as easily as through a normal pelvis, but



if not, the after-coming head may be relieved by the forceps.

In the equally faulty or contracted pelvis, version is almost impracticable, and if resorted to, the mechanical efforts to deliver the child will be far greater than by the forceps, unless craniotomy has been performed previously. Should craniotomy have been performed, then version may possibly succeed. It has not in some of the cases I have seen, and it totally failed in the case related.

Much as I have advocated craniotomy in preference to the Cesarean section, in the simple flat pelvis, in my former papers on craniotomy and cephalotripsy, I am constrained to believe that one of the external operations, as the Cesarean section, or laparo-elytrotomy, early performed, or symphysiotomy, when the labor is more advanced and the head wedged in the cavity, should be selected. The election of either of these methods will be dictated by the nature of the case, the condition of the patient, and the views of the operator. Each of them has his own special sphere of action. Although the two last were suggested and practised many years since, they had almost passed into desuetude, and were considered as impracticable. Fortunately, they have been resuscitated (the Sigaultian operation by Profs. Morisani and Novi, of Naples, in 1866; the laparo-elytrotomy of Ritgen and Baudelocque by Prof. Thomas, of New York, in 1870; and the cervico-pubic laparotomy of Physick, of Philadelphia, by Kehrer, of Heidelberg, in 1880). They have at the present day again become new resources which are to enrich and benefit our art. They are operations, nevertheless, which are attended with their own peculiar applications, advantages, and dangers, but which at least may render craniotomy and cephalotripsy more rarely necessary. I do not believe they will supersede the classical Cesarean section, especially when we take into account the more recent and improved methods and means for conducting that operation.

The Porro operation, or its modifications, is inadmissible in this form of pelvis. Laparo-elytrotomy or the cervico-pubic operation are also contraindicated, should the head of the child have become arrested in the cavity of the pelvis. Symphysiotomy as an operation is more especially for the benefit and safety of the child. It is not recommended in pelvis of less

than two and three-fourths or three inches, or that are much diseased. Although symphysiotomy has received bitter denunciation, yet, while Gerard and others regarded it as useless, Velpeau, with others, considers it as the only means of safety that could be adopted. It is particularly applicable to the class of pelves I have considered, and especially to the equally contracted, presenting features for acceptance, in so far as the child is concerned, in preference to the others. Roederer, the celebrated Hollandish obstetrician, considered that at some future day it would be advantageously resorted to. In the Neapolitan hospitals, during the last sixteen years, Dr. Harris informs us that fifty-three operations were done with a saving of forty-three women and forty-two children. This is a result equal to that of the early performed Cesarean section under favorable circumstances. Five of these were of the faulty type. It has been alleged by the antagonists of the operation that, after the division of the symphysis, and when that joint was opened to the extent of three inches, without impairing or injuring the sacro-iliac joint, only three or four lines at most could be gained. This, however, is an incorrect and one-sided view of the subject and only a partial consideration of the benefit of the operation. It is conceded that the separation of the pubic arch gives only three or four lines of advantage to the antero-posterior diameter, the chief gain being in the transverse and the oblique diameters, which are increased to the extent of one inch each for the cavity and inferior strait. This important, highly valuable, and appropriate enlargement of the cavity of the pelvis has been by many overlooked, they having confined their views of the subject simply to the lengthening of the conjugate, and not to the amplification of the cavity. This amplification is precisely what is required to permit the natural delivery of the child in this class of pelves, and if this is not accomplished soon, we can apply the forceps. From these considerations, respecting the different external operations, we are led to accept either the early performed Cesarean section, or symphysiotomy, should the child's head be arrested in the cavity of the pelvis. If it is not, then either laparo-ely-trotomy or the Cesarean operation.

I regretted very much, even after I had progressed some way with the delivery of the child in *this* case, that I had not

performed either of these operations, as the head was at the superior strait; but as the internal soft structures appeared so much swollen, and the patient so exhausted by the length of time the labor had existed, I continued with the operation related.

In the two last cases I attended, one with my friend, Dr. C. C. Lee, the defect of the pelvis was in the inferior strait, which measured two and one-quarter inches, and which was, as was afterwards learned, consequent on some previous disease of the hip joint. The labor had continued several hours, and the child was living. The child might have been saved. The patient died on the third or fourth day from pulmonary edema.

It is a correct, true, and practical remark of John Clark's, "That the head of the child cannot pass entire when the diameter of the pelvis is under three and a quarter inches, and even then it will require the perforator." If this is true, and there can be no question or doubt about it, how then could we expect a head of ordinary dimensions to pass through a diminished or contracted pelvis when equally faulty in all its diameters of one-third to one-half inch? Rotation of the child's head, especially if it is an occipito-posterior presentation, cannot possibly take place in the cavity of the pelvis, as there is not *compensation* enough in the pelvic diameters to admit of it, unless the child's head has been moulded to fit, as in the specimen exhibited.

It is the same with the immature and male pelvis; though different in conformation, the head will, in some cases, descend considerably into the cavity, and become firmly arrested. There is, however, not so much difficulty in the delivery when instruments are required. If craniotomy is done, the brain evacuated, and the head tilted sideways to allow the base to come through, the inferior strait may be lessened to only one and three-quarters to two inches.

Considering the great progress abdominal surgery has made during the last few years, I would not forget the dangers to the mother which will and must surely follow from an improper delay in terminating the labor. For every hour the labor is extended, the vitality of the mother is lessened, till it is finally extinguished.

Should another instance such as I have related, and where the narrowness or faulty state of the pelvis is from one-third



to one-half inch, and where there is no prospect of the delivery being accomplished naturally, I would hold myself obligated, with the views I have expressed, to advise the selection of one of the external operations referred to in preference to that of craniotomy or cephalotripsy. I am impressed with this belief after considerable reflection that in these types of defective and faulty pelves it would be less hazardous and accomplished sooner; that we would feel the gratification of having a living child, as well as greater hope for the life of the mother, than would the prolonged, wearisome, tedious, and trying operation by cephalotripsy.

[In a paper contributed to the American Gynecological Society in 1879, Dr. Wm. T. Lusk advocated, in the treatment of cases of pregnancy with justo-minor pelvis and conjugate diameter under three and one-quarter inches, first, induction of premature labor, or, if too late, the Cesarean section, and called attention to the invariably fatal results which, in extreme cases, had followed the performance of craniotomy, being, we are informed, the first to do so. Dr. Lusk would appear, therefore, to have recommended several years ago substantially the same plan of action as is recommended by Dr. Taylor in the present paper.—ED.]

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#### A NEW COMBINATION RECTAL AND URETHRAL SPECULUM AND A MODIFICATION OF THE SMITH-HODGE PESSARY.

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BY

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I WISH, with a few words of explanation, to present to the profession an instrument which I have recently constructed, after Sims' perineal speculum, for examining the rectum. It is especially designed for ease and comfort to the patient. All who are familiar with the treatment of rectal ailments know that, for the purpose of exploring the rectum, Sims' perineal speculum has no rival, while for cruelty it is also unequalled. It is common experience that the introduction of Sims' speculum through the anal sphincters, however carefully and skilfully performed, causes great suffering. I claim for this instrument all the advantages possessed by Sims' speculum; and one more—painless introduction. It can be seen at a

glance how much it resembles Sims' perineal speculum. In fact, it is dissimilar only in possessing a rounded blunt point at the distal end of the valve, in shape and size not unlike the end of a female glass syringe.

With this, as with every variety of speculum, a good light is essential for a thorough inspection of the rectal vault. After the instrument is introduced, the anal segment opposite the speculum should be drawn away, else it will interpose between the line of vision and the vault. A narrow, flattened piece of metal, bent at a right angle near one end, or a Simpson's sound, similarly bent, make good retractors for this purpose. This is an important point in the manipulation, and, unless heeded, the examination will quite likely prove unsatisfactory. When the vault is thus fairly exposed, I have been greatly aided in localizing morbid regions, and especially in detecting sensitive points, by passing the end of a sound over the rectal mucous membrane. I think it will be found a far more delicate indicator than the finger. To illustrate. A patient, worn and weary of life, from long suffering, consulted me during the winter for what had been considered a uterine difficulty. I recognized subjective symptoms of rectal trouble. Upon inspection, the mucous membrane exhibited no appearance of abnormality. The only unnatural object seen was a small tab of healthy-looking mucous membrane, located just above the internal sphincter, and in size and shape not dissimilar to a mouse's ear. This was so sensitive as to cause the patient to cry out and attempt to escape when it was touched with the sound. I think the use of the sound or probe in this connection invaluable. The opposite end of the instrument is a miniature representative of the rectal speculum. This is designed for examination of the female urethra. The two instruments thus united are called the "combination speculum." I am not sure that the urethral speculum can be as conveniently used when combined with the rectal as when made a separate instrument, as the long shaft interferes somewhat with free manipulation. If the meatus urinarius is dilated up to a No. 25 dilator before using the speculum, much assistance will be gained. A retractor like the sound bent at a right angle should be used to draw away the wall of the urethra opposite to the speculum.

Another instrument which I have recently perfected, and

which has given me great satisfaction, is a simple and slight modification of the Smith-Hodge pessary. A pessary to be self-sustaining must have length and breadth corresponding to the length and breadth of the vagina. As the Smith-Hodge pessary is made of rounded hard-rubber bars, one-quarter of an inch in diameter, it will have a fenestra with a diameter equal to the diameter of the whole instrument, less the thickness of the bars, which would equal only one-half inch. We find in practice that the Smith-Hodge pessary, when wide enough to be

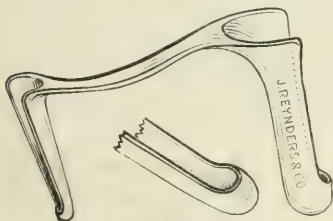


FIG. 1.

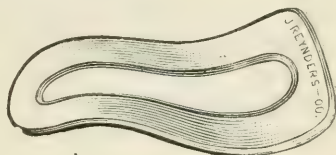


FIG. 2.

self-sustaining, quite commonly has a fenestra so wide that the uterus slides through it, and hangs itself, as it were. The strangulation thus produced develops and maintains a congestion of the parts. To obviate this accident, I have had a Smith-Hodge pessary made from flattened bars of hard rubber, which, of course, can be of any desirable width. Any increase of the diameter of the bars can be at the expense of the fenestra. I think the profession will find that pessaries thus fashioned will very often act better than the Smith-Hodge, when constructed of round bars.

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#### AN IMPROVED VAGINAL DOUCHE.

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BY

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IN the absence of junior and senior assistants, where hospital work with large service has to be carried on with but a single physician to a department, many additional duties requiring



skill and judgment necessarily fall to the lot of the nurse. It then becomes the duty of the physician to arrange for the accomplishment of this work with a degree of efficiency and beyond the peradventure of serious accident to the patient. While in charge of the Lying-in Department of the State Emigrant Hospital, with an average service of one birth a day, it was impossible for me to give my personal attention to each patient I desired to give the douche. Notwithstanding that I was aware of the fact of this work being intrusted to the nurse in many institutions and previously in this one, I still did not feel justified in continuing it with any apparatus I was familiar with and which is commonly used for this purpose. To confirm me in my fears I learned from the physician previously in charge of the wards that in his hands a case of partial collapse had followed the use of the Davidson syringe upon a woman recently confined. In the hands of the nurse there seems to me danger to the patient with either the Davidson syringe or simple straight nozzle and ordinary douche pan so commonly used. Especially is such apparatus dangerous when used upon women just after confinement, where os and cervix are so open and the vagina, on account of its swollen tissues, more than ever suited to obstruct and dam back upon the uterus and Fallopian tubes any fluid injected into it. Dilating the orifice of the vagina by inserting the fingers along the side of the nozzle will, of course, secure an unobstructed return current, but this is an unnecessary and dangerous procedure if we have a proper nozzle to our douche. Where a nurse is douching an entire ward of puerperal women two or three times a day, whose lying-in periods vary from one to twenty or thirty days, an introduction of her fingers, or even of the same nozzle in each case, can but carry with it the dangers of infection which these women are so prone to. The nozzle described in this paper avoids all danger from these sources and is at the same time perfectly safe and efficient in the hands of any one with sufficient intelligence to introduce it. The douche current used is that of the so-called "fountain syringe" which is simply the continuous current by hydrostatic pressure from a convenient reservoir. This, so far as I am aware, is the current universally chosen for this work. The intermittent current, of which perhaps the Davidson syringe is the best adap-

tation, has most obvious objections and is generally condemned for vaginal or uterine douching, especially in the puerperal ward. As the reservoir used is designed with especial reference to the nozzle, it will not be superfluous to describe the entire apparatus as it is shown in the accompanying cut.

The reservoir is simply a tin can, capacity about two quarts, with the following attachments: In front, spout (A) for attachment of conducting tube (E), tin bracket (B) which provides for the convenient disposition of tube when not in use. Extending from spout to bracket is narrow glass window which furnishes operator a convenient gauge of height of water in can.—Behind, handle (C), hook shape, which thereby serves the further purpose of suspending the can at top of screen or other convenient

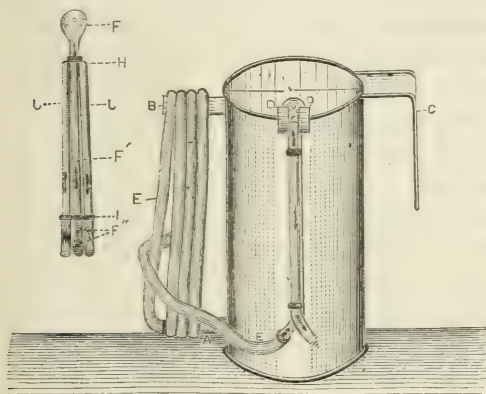


FIG. 1

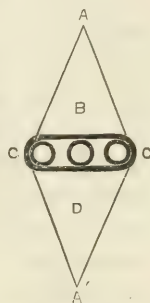


FIG. 2

fixture about bed. At the left side, tin claw bracket (DD) by which the nozzle is safely supported. The conducting tube (E) is simply a piece of soft rubber drainage tubing, about ten feet long. It is the nozzle, of which both front and lateral views are shown in cuts, to which I would call especial attention. Its principle of construction is the old one of an in-and-out current; the arrangement and number of the pipes, however, involving an extension of this principle, the instrument being so made that it not only returns fluid by the pipes, but also, by progressively distending the vagina from within outward, insures an unobstructed return current along the vaginal walls. Analyzed, it consists of three pipes (JFJ), each about one-quarter to three-eighths of an inch in diameter. The central (FF'F''), the in-

current pipe, is seven and a half inches long, with bulb (F) at upper end three-quarters of an inch in broadest diameter and perforated with holes. (This bulb is made designedly broad, for the double purpose of providing a blunt extremity to the instrument and also to separate the vaginal walls sufficiently to facilitate the introduction of after-coming pipes.) At (I), six inches from bulb, pipe is bent at angle of  $135^{\circ}$ . A slight bulbous enlargement (F'') at lower end serves for firm attachment of conducting tube; (JJ) are two lateral pipes, six and a quarter inches long, attached firmly to opposite sides of central pipe above, at (H), one-half inch below base of bulb, where they hug the central pipe closely for about one-half an inch, and below at (I), where they are one-quarter of an inch from it on either side. Each lateral pipe is at (I) also bent at angle same as central pipe, but in opposite direction. (This is well shown in figure by lateral view of nozzle as it is suspended by can.) At their upper ends (H), the lateral pipes are carefully rounded off and the calibre of the two openings into the pipes made so as to sum up *somewhat less* than the calibre of the central pipe. The pipes are made of glass; other material may be chosen, but this has the virtue of being very cheap and showing plainly whether or not it is clean. An objection to it is the possibility of danger from fracture; this at first seemed to condemn it, but the danger is entirely avoided by firm and careful construction. During the past six months, it has been in constant use in my wards, in the hands of nurses no more than ordinarily cautious, and not a single accident has occurred.

We have then the following conditions: a nozzle that cannot be inserted more than six and one-quarter inches, that being its entire length up to the angles (I) which prevents its further advance. These angles further serve, in case of lateral pipes, to direct return fluid conveniently to bed-pan, while that in central pipe prevents a sharp angle in conducting tube when can is elevated. We also have by arrangement of pipes an instrument which increases in breadth from three-quarters of an inch at upper end to one and one-quarter inches at lower, while its thickness remains only one-quarter of an inch or the diameter of a single pipe. The point thereby gained is best indicated by diagram as follows, though of course diagrammatically exaggerated.



AA' representing the anterior and posterior commissures, (CC) the nozzle inserted at centre, we have the vaginal orifice (ACA') divided into two triangular spaces (B) and (D) entirely unobstructed. This must allow of the exit of all fluid, small clots, shreds of membrane, etc., within the vagina, whether or no the exit pipes are stopped—a contingency likely to occur especially where we have accumulations of such material.

In conclusion we may sum up the following practical advantages of this apparatus, substantiated by its constant use in this institution :

*First*, its economy; the entire apparatus, outside of the tubing, can be procured for seventy-five cents; the nozzle alone can be bought in quantities of 100 for fifteen cents each. At this price it is easily afforded to fulfill the very important indication of providing a separate nozzle for each patient, while a single reservoir and conducting tube remains sufficient for an entire ward.

*Second*, the safety of the apparatus is another important advantage. The bulb being very broad and the instrument only  $6\frac{1}{4}$  inches long, the danger of a careless nurse introducing it far enough or with a sufficient amount of force to do harm is entirely avoided. Again, the provision for the free return of all fluid injected which the instrument affords, and which I know from experience it accomplishes, must give ample assurance to the most cautious mind of the impossibility of accident from this source.

*Third*, the *efficiency* of the nozzle. This is, no doubt, best shown practically by the results attained from its use. Without going into any detailed account, it will suffice for me to affirm that after its constant use for the past six months, including the douching of severe cases of puerperal fever where ulcerations existed upon a lacerated cervix and membrane extended to the vaginal walls, I have been able, with the use of proper antiseptic solutions by frequent douching with this apparatus in the hands of the nurse, to invariably improve the patient's condition and keep the vagina sweet and clean, and free from accumulations of foul discharges and detached shreds of membrane, which could not possibly flow out through any canalized pipe in use, and which are, as a matter of fact, so often retained where especial care is not taken to

keep the vaginal orifice well distended. Any one can satisfy himself of this fact by examining a vagina in which there has been much accumulation, immediately after douching in the ordinary manner by straight nozzle. The provisions of this instrument which insure a thorough cleansing of the vagina are, the narrowing of the calibre at entrance to the exit pipes, thereby accomplishing the object of returning a portion of the fluid by vaginal walls, and where this is an especial object, as in class of cases just cited, I do not hesitate to instruct my nurses to accomplish it more fully by the simple manœuvre of placing the tips of the index and middle fingers to the orifices of the exit tubes, thereby forcing the entire quantity of injected fluid to return along the vaginal walls. The provision for this free return by the progressive dilatation of the vagina, which the instrument insures, has been fully explained. In this connection I am aware that the vagina, being cylindrical in shape and flattened from before backward, may be urged as opposed to the utility of the nozzle in this respect, for it may be said the walls of the vagina will simply collapse upon the instrument. It must be remembered that there is an unfilled space between the pipes which must remain open, but aside from this, as I understand this difficulty, it is not so much within the vagina that we need fear obstruction of the return current, but rather at the constricted orifice. It is just this feature the arrangement of the pipes overcomes. We thus combine in one instrument the utility of the single current nozzle, which returns its fluid only by vagina, and the straight, doubly canalized nozzle, which returns its fluid only by pipe; while we avoid the danger of the first, and increase the usefulness of each.

Finally, the instrument can be used to equal advantage both in the obstetric and gynecological wards wherever vaginal or cervical douching, for whatever purpose, is indicated.

While I do not describe this simple apparatus in the spirit of an inventor, or with too exaggerated an idea of its intrinsic merit, I yet do claim for it the respect which I have come to allow it for the wonderful amount of labor and freedom from worry it has saved me, while at the same time the patient has, I am firmly convinced, shared with me a benefit from its use.

A CASE OF TRAUMATIC HEMATOCELE OF THE VULVA IN  
A VIRGIN.

REPORTED BY

WM. P. CHUNN, M.D.,

Chief of the Gynecological Clinic, University of Maryland; Assistant Surgeon to  
Woman's Hospital, Baltimore, etc.

IN reference to the above-mentioned lesion, I find most of the text-books on diseases of women so sparing in their descriptions that I have ventured to send for publication the history of a case of labial hematocele in a virgin which recently fell under my care in this city.

Most authors seem to consider this accident so rare or so unimportant as to be hardly worthy of mention, except as a complication of the puerperal condition, and the majority of writers do not mention it at all as occurring in the virgin. Dr. Thomas, who gives quite an extended account, regards it as extremely rare in nulliparæ, having met with it only four times in a practice of twenty-seven years. West does not mention the subject at all.

Among those who first call attention to this affection I find the name of Rueff, of Zurich, who recognized and treated these cases as early as 1554. Afterward no record of such cases can be found in the literature of the day until the subject was again revived by Deneux in 1830, thus allowing some three hundred years to elapse. Emmet, Courty, and Ashwell do not allude to this accident, so far as I have been able to discover. Barnes speaks of it as occurring only in the puerperal woman. Velpeau, on the other hand, says he has in his practice met with some twenty cases, and then asserts that it is nearly as frequent in the virgin as in puerperal women. At this statement Dr. Thomas naturally expresses surprise. From the very condition of the parts in pregnancy and during labor, I think hematocele more apt to result then than in the virgin. First, because the vessels themselves are greatly enlarged as well as immensely hyperemic, and then also the area containing them is so increased in size. Again, any blow on the parts at the puerperal period, however light, is much more apt to cause a rupture of a blood-vessel in a pregnant woman than in a virgin, for the reason already mentioned.



Of this affection I have seen altogether but two cases, one in a virgin, which is here related, and one in a woman at term. So far as my brief experience goes, neither side has the advantage. But then it must be remembered that the vast majority of women presenting themselves at a gynecological clinic suffer from uterine diseases of some kind, and therefore are seldom pregnant, and consequently it happens that very few pregnant patients are seen at all, and thus we are unable to discover the frequency of this trouble during pregnancy. This fact may constitute a reason for the discrepancy of opinion.

The patient referred to in this report came for advice, and presented the following history:

She was twenty years of age, unmarried, no children, no miscarriages, and reported herself perfectly healthy and regular in every way. On the morning preceding that upon which she applied to me for treatment, she was playing on the piano, her mind being thus fully occupied at the time. Just at this moment some one knocked suddenly and violently on the door behind the patient, which so alarmed her that she jumped up suddenly in great haste to open the door, but unfortunately became entangled in the piano stool which she upset, and falling violently upon the same, one of the sharp edges struck against the right labium midway between the ant. and post. commissures. Upon examination, a tumor as large as an orange was found distending the right labium and was the cause of much pain during micturition and in locomotion. The tumor fluctuated freely, and palpation produced no pain. These facts, taken in conjunction with the history of the case, proved sufficient to indicate a correct diagnosis, which was then made, and as there was no way to get rid of the effusion except by cutting open the sac, the patient was advised to get on the table and have the operation done. The dorsal position being found most convenient with the knees wide apart, and styptics having been prepared, in case of hemorrhage, a sharp-pointed bistoury was introduced into the sac, and an incision about an inch long was made over the most prominent part of the swelling. The incision was immediately followed by a gush of pure blood amounting to nearly four ounces. Pressure was then made and a number of clots in a semi-fluid condition were turned out, much to the relief and gratification of the patient. As considerable oozing followed, which did not yield to pressure, it was found necessary to wipe out the sac with a solution of tannin. This being done, all hemorrhage ceased, and the patient shortly afterwards returned home. Some days afterward she returned and reported herself as none the worse for her disagreeable accident.

June 27th, 1883.

COR. LOMBARD AND GREEN STREETS, BALTIMORE.

## DR. J. LEWIS SMITH'S CASE OF PERNICIOUS REMITTENT FEVER.

REPLY TO DR. FRANCIS L. HAYNES.

BY

J. LEWIS SMITH.

THE kind and courteous criticism of my case of fatal fever occurring in the puerperal state, by Dr. Francis L. Haynes, of Philadelphia, requires some notice on my part. I suspect that he has not read with sufficient carefulness the report, or his criticism would have been different. Cases like the one which he details occur in the practice of all physicians, but are, I believe, entirely different from the one in question. I will briefly repeat the leading facts in my case, some of which are not correctly stated by the doctor.

A primipara of nervous temperament had been thirty-nine hours in labor, and the head had descended nearly to the perineum, when the uterine contractions were so infrequent and feeble that no further progress was made, and the labor was slowly and cautiously terminated by the short forceps, with no appreciable laceration except a very slight one of the perineum when the shoulders passed. I appreciated the fact that uterine inertia was present, so that ergot was immediately given, the uterine tumor constantly pressed upon, and kneaded through the abdominal walls by the left hand, ice applied to the vulva, and the right hand introduced sufficiently into the vagina to ascertain whether there was any undue flow. While waiting for the expulsion of the placenta by the constant kneading, and by the action of the ergot, and while the lower part of the placenta could be felt pressing upon the fingers, the patient, without any premonitory signs, ceased breathing, her head dropped on the chest, and I was apprehensive of sudden death by syncope. The prompt removal of the placenta seemed to me important under the circumstances. The fingers of the right hand were carried upward with a lateral movement outside the placental mass, until it was fully detached and it was immediately removed from the vagina; at the same time constant kneading was produced by the left hand. The placenta was carefully examined afterwards, as I always examine it, and found entire.

The nurse had been educated in the maternity wards of one of the New York institutions, where she became familiar with vaginal and uterine irrigation, and was the most trusted assistant of the doctor in charge. On the day after the birth of

the child, she began using the carbolized injections, introducing the instrument so far as it would enter without obstruction. On the second day after confinement, eight hours before the commencement of indubitable symptoms of the disease of which the patient perished, considerable uterine hemorrhage occurred, and clots were expelled which appeared fresh and had no offensive odor, and did not present the least appearance of decomposition. Would this discharge have been of this character if the conditions within the uterus were such as to cause septicemia eight hours subsequently? The physicians in consultation, two of whom distinguished as gynecologists and obstetricians, made careful intravaginal and intrauterine examination, carried their fingers as far as they could extend within the uterus and found no stench upon them and nothing abnormal in the uterus, and not one, now at the close of the first week, recommended intravaginal or intrauterine irrigation. Therefore the use of carbolized injections was discontinued at about the seventh or eighth day, and the discharge subsequently was never in the least offensive—a fact which the nurse corroborates. Once at about the twelfth day when I examined the slight discharge upon the napkin I could discover nothing unusual in it, unless it was a little darker than in most patients, as if from pigmentation. The lacerated surfaces through which septic matter was absorbed, and the putrefying clots, such as Dr. Haynes removed by his fingers in his case, existed, as regards my case, only in the doctor's imagination. The patient was unusually free from lacerations as will be seen by referring to my paper. When local treatment was discontinued, after the consultations were held, not a single symptom or sign occurred to show that the uterus was in any other than its normal condition. Does not the doctor suppose that Dr. Lusk or Dr. Metcalfe was as competent in his careful digital exploration to detect and remove clots, or notice upon his fingers some evidence of decomposing lochia, as he was in his case?

Therefore, in the absence of an autopsy, I see no reason to change my belief that the cause of the malady was not intrauterine, and that it entered the system through other channels than the generative tract. A critic at a distance ought to be more careful how he alleges malpractice in the treatment of a grave and fatal case, since it might do great harm. In this case,



the charge affects the reputation of such men as Lusk, Barker, Otis, and Metcalfe, all of whom, after careful examination, recommended constitutional treatment, and saw no reason to continue the irrigation or other local remedies.

The distinguished authority whom Dr. Haynes quotes, Dr. Playfair, if I understand him correctly, applies the term septic fever, or fever due to septicemia, to the various forms of child-bed fever due to the entrance of a poison into the system, whether it be by absorption from the utero-vaginal surface, or through the skin, or occur from tainted air in the bedchamber or the use of polluted water. This is, of course, a correct etymological use of the term, but we in this country are apt to restrict the term septic poisoning or septicemia to the condition of the blood which results from the absorption of some putrid substance. But Playfair states what I believe is generally believed by the profession, that the poison may be received from infected clothing, from even a garment hung in the room, from exposure to another patient, and in some instances it is known to be communicated through a third person who has visited a case. He states that although there may be similarity of symptoms, the poison may be different in different patients, in one the scarlatinous, in another the diphtheritic, in another the miasm from some putrid substance, in another the putrid substance itself absorbed into the blood. I have little doubt that if he had attended my patient he would have designated the disease septic fever due to miasm of some sort. I designated the disease, perhaps unfortunately, pernicious remittent fever because it had very decidedly the character expressed by these two adjectives, and because the history of the nurse appeared to show that marsh miasm was present in the bed-chamber as one of the insanitary conditions, its action being intensified and rendered pernicious by something else, may be sewer gas, may be water-closet exhalations. When I questioned the family as to the sanitary state of the house, the husband remarked that the water-closet was not in good condition, the odor from it being frequently offensive. If Dr. Haynes will refer to my paper, he will find at its close a case detailed which was apparently almost identical with mine in symptoms as it was in result. The disease began before the termination of labor, was attended by frequent rigors and chills, and was attributed

to the inhalation of sewer gas. Playfair would have designated it septic fever from sewer gas. Now I would ask Dr. Haynes what benefit would result in such a case from intra-uterine irrigation. This has its place, and an important one in the therapeutics of child-bed fever, but it is obviously inapplicable to cases in which the uterus and uterine cavity are in their normal state. It is the universal experience in our profession that those who have one sovereign remedy, a hobby for a disease whose etiology and pathology are different in different cases, sooner or later come to grief. The treatment must vary according to the character of each case.

NEW YORK, 227 West 49th Street.

July, 1883.

## CORRESPONDENCE.

### MASTURBATION IN THE FEMALE.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

SIR:—After a careful perusal of Dr. Chapman's article on "Female Masturbation" in the May and June numbers, permit me to take exception to some of its parts. There can be no two opinions as to the ultimate results of masturbation on the female, and in giving his experience to the profession, Dr. Chapman has opened up channels of research that long since should have been more carefully considered and studied. The more I consider the subject, the more I feel that in the past I have erred in diagnosis because of a too superficial knowledge of the results of masturbation. I am not going to quarrel with the doctor as to the ultimate results of the act, because I am of opinion that he is correct as to the pathology of his cases; but when he attempts the description of the orgasm in the female and its connective surroundings, then, in my opinion, he wanders away from the true physiology of the act. From careful observation, I am of opinion that, all things being equal, a commencement of the act either of masturbation or coition naturally leads to its consummation, viz., an orgasm. That if, in the healthy female, an orgasm is not produced in the act of coition, she is not satisfied, and either will continue the act by herself or with her coadjutor till such consummation does take place. That there is a pleasurable

excitement from the commencement of the act of masturbation is a fact, but that that act is simply an inductor to the finale is equally true, and the woman gives herself over completely from the first till the physiological results are a *fait accompli*, the desire increasing as the end approaches. In some women, so intense is the pleasure of an orgasm proper that it has been described to me as almost painful, and that there was a feeling during the orgasm in and about the uterus of expulsion and bearing down. Dr. Chapman says: "In them—the female—the excitement attending consummation is not associated with anything really corresponding to emission." Here we differ. When the orgasm in the female takes place, there is an erection of the clitoris, and so long as the orgasm continues its muscles contract as regularly as do those of the male in the act of emission of semen; at the same time the whole machinery of the muscles of the uterus is put in motion, it (the uterus) sways from side to side, its whole body rises and falls from an eighth of an inch to a quarter, and the annular muscles of the cervix can be distinctly felt contracting. Does the uterus emit anything in the act? Before an orgasm is induced every particle of mucus may be washed from the vagina, a rubber cap may be placed over the cervix, and when the act is over, if it be removed it will be found to contain from a half to a drachm of transparent semi-fluid substance resembling the white of an egg. I am not in a position to say what this secretion or excretion is, or whether it comes from the uterus or not. That it is there after an orgasm I know, that the uterus and clitoris act as above indicated I likewise know, and, in my opinion, hence it may more easily be seen how rapid are the pathological results of masturbation in the female. My experiments have been conducted with great care, taking into consideration all secreting glands in the neighborhood. The vagina was thoroughly washed, the cervix was cleared, and a close-fitting rubber ring, with a cul-de-sac attached, covered the cervix when collecting the fluid during orgasm. Several times no ring or sac was used, and my index finger was placed against the most dependent portions of the cervix on these occasions, so as to be able to carefully detect every motion of the organ, while my thumb was in contact with the clitoris. If the act of masturbation brings into play so many forces, and if the orgasm is being constantly induced, it can be readily understood how it happens that soon a dangerous train of symptoms is set up that an unsuspecting physician may find it very difficult to control.

Yours, etc., S. E. McCULLY, M.D.

WATERDOWN, ONTARIO, July 7th, 1883.



[We ourselves have seen the gushing, almost in jets, of clear, viscid mucus from the external os during evident sexual excitement produced by a rather prolonged digital and specular examination in an erotic woman (a "femme entretenue," a blonde Swede). The lips of the external os alternately opened and closed, with each gaping emitting clear mucus, until the excitement (which we confess to having intentionally prolonged by gently titillating the cervix with a sound through the Sims speculum) reached such a height as to cause the woman to sit up on the table, and thus end the experiment. It should be stated that a nurse was present, and in view of that fact it was thought allowable to use this exceptional opportunity to test the correctness of the observations of the late Dr. Joseph R. Beek, of Fort Wayne, Ind., and of Dr. Wernich, of Berlin, to the effect that the external os alternately contracts and dilates during sexual excitement. A confirmation of their views was the result.—ED.]

#### RETENTION OF CATHETER IN FEMALE URETHRA.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

526 NICOLLET AVENUE,  
MINNEAPOLIS, MINN., July 9th, 1883. }

DEAR SIR:—The case of Dr. Allen, reported in the June number of the JOURNAL, recalls an experience of my student days that may not be without interest to some of your readers.

The accident happened in a case of ovariectomy performed in a country village by Dr. Hill, of Augusta, Me. The patient was left in my charge, with directions to draw the water for the first few days. Everything went well till the third day, when, on attempting to withdraw the catheter, I found, much to my consternation, that with all the traction I dared use, it would not come. What to do I did not know. All my books were explicit on how to introduce the catheter; on how to take it away, not a word. A telegram to Dr. Hill brought by return express a catheter, the half of which had been cut away lengthwise, and one end thoroughly sharpened, with directions to pass the sharpened end along the imprisoned catheter till the obstruction should be reached, then to bring away the instrument with a sudden jerk. This I did very easily, but not until after the patient's demand that she be given ether had been complied with. No bad symptoms whatever followed. The patient made a good recovery.

Before the operation, the woman had been tapped thirty times, during which she had become tolerably familiar with ether, so the giving it may not have been so rash as it otherwise would appear. The patient told me that a few years before a doctor, in attempting to draw her water, had got his instrument caught in the same way, but that he had torn it out at once, hurting her very much, after which she was sick several days.

It would appear, then, that Dr. Hill's ingenious use of a split catheter is the safest way out of such an accident. It is needless to add that I took my catheter to the nearest jeweller, and had the eyelets filled with a plate pierced by a number of small holes, since which it has got me into no such disagreeable dilemmas as on the above occasion.

Respectfully yours, C. H. HUNTER.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Stated Meeting, Thursday, June 7th, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. FRED. C. SHEPPARD exhibited the uterus and appendages removed *post mortem* from a case of

### INTERSTITIAL OR TUBO-UTERINE FETATION,

and read the following report :

Through the courtesy of Dr. George S. Hull, of Chambersburgh, Pa., I am enabled to present, this evening, the *post-mortem* specimens of one of the rarer forms of extrauterine pregnancy. The history of the case is given in such a clear and complete form by Dr. Hull that I will read it in his own words :

"(April 11th, 1883). A few days ago, it fell to my lot as coroner to hold an inquest on a colored woman who had died suddenly. Vomiting followed by death, together with a history of family troubles, led her friends to suspect her husband of poisoning her.

"About three A.M., pains had set in in the left inguinal region, accompanied by severe vomiting; I could not learn whether the pain preceded the vomiting, or *vice versa*. A physician was sent for; he did not go, but sent three  $\frac{1}{4}$ -grain morphia powders. She took one every hour, seemed easier, and the vomiting ceased. At noon, becoming very weak, the doctor was again sent for, responded in person, and found the patient pulseless at the radials; he ascertained that she had been constipated for about a week, and made a diagnosis of obstruction of the bowels; he gave five com-

pound cathartic pills, and ordered an enema. In an hour, the patient was dead.

"*Autopsy*: Peritoneum inflamed (recent—no pus); stomach empty, save the pills, which were liquefied; *intestines* normal. About two quarts of clotted blood were found in the abdominal cavity. The womb was ruptured, a small circular rent in the fundus about the left cornu.

"The uterus was removed and the rent enlarged; a fetus of about three months, with membranes entire, was found. The placenta seemed attached at the point of rupture.

"The pregnancy seemed to be interstitial, the tube being involved. The lower half or two-thirds of the uterus was much hypertrophied, and contained two or three teaspoonfuls of mucus, which could be pressed out at the os uteri. There was no communication between the pus-cavity and the cavity containing the fetus. The uterus was not adherent to the other organs."

A sketch by Dr. Hull shows the uterus inclined to the right side, the fetal sac occupying very nearly the normal position of the fundus, and the point of rupture a little to the left of the line of the umbilicus.

"It occurred to my mind that the rupture was spontaneous, causing the vomiting and pain of the night; however, the woman had eaten of sauerkraut for supper, and it might have caused the vomiting, and that in turn the rupture. The morphia allayed the symptoms for a time, but the hemorrhage was slowly going on, and peritonitis setting in; the former predominating, death took place from loss of blood. She was the mother of one child, and was, to all appearances, in good health up to the time of the accident."

An examination of this very interesting specimen shows an enlarged womb with a dilated cavity, the walls of which are hypertrophied to a thickness of seven-eighths of an inch; lining this cavity is a structure which appears to be a true uterine decidua: the os is small, with an irregular stellate outline, and is perfectly patulous; the cervix is partially absorbed. The right ovary is small and flattened; the left of about normal size; at the point of entrance of the left Fallopian tube is a large intramural cavity which contained the fetus; the outer wall of this cavity is exceedingly thinned, and presents ragged edges at the point where rupture took place; to the inner wall are attached some remnants of the placenta; no communication can be detected between the fetal cyst and the uterine cavity. The fetus is apparently of from three to four months, and is presented with the membranes unbroken.

To cases of this class the terms interstitial, tubo-uterine, utero-interstitial, and parietal have been applied. Dr. Parry, in his work on "*Extrauterine Pregnancy*," classifies them under the head of "tubo-uterine, or those in which the germ is arrested in that portion of the tube which passes through the uterus." They are very rare. An analysis by Hecker (quoted by Parry), shows twenty-six



cases out of two hundred and twenty-two, and Parry, in his analysis of five hundred cases of extrauterine pregnancy, finds but thirty-one of the tubo-uterine variety, but two hundred and thirty of his cases are grouped under the general head of doubtful. Mr. Alban Doran (*Obstet. Trans.*, vol. xxiv., 1882, p. 234) has been able to find but six specimens in all London, though he states that "we see a goodly array of the more frequent tubal form in almost every museum." I will not occupy your time this evening by referring to the question of pathology or of diagnosis, as both points cover the entire ground of extrauterine pregnancy, and will be discussed in a future paper.

The proper treatment to adopt in these cases is, however, a point of great interest, and merits notice. A ruptured extrauterine fetal cyst may cause death instantaneously, as in the case of the English actress mentioned by Dr. Chabazian (*Obstet. Trans.*, 1882, p. 157). "She was taking an ice in the Bois de Bologne; she fell down suddenly, and she was dead." Poisoning being suspected, an autopsy was performed. No trace of poison was detected, but the ruptured pouch of an extrauterine fetation showed the cause of death. In this case, of course, there was no time for surgical interference, but in many, as in the one reported this evening, an appreciable interval elapses between the first symptoms and the fatal issue. The diagnosis being made, what would be the proper course to pursue? Unquestionably, laparotomy. An exploratory incision would at once reveal the true condition of affairs, and the surgeon could either incise the cyst, turn out the contents, ligate the bleeding points, suture the edges to those of the abdominal wound, and establish drainage; or, if thought better, remove entire the uterus and its appendages. Either plan would offer a very fair prospect of recovery, while if left without surgical aid the patient would be doomed to inevitable death.

A number of points of interest present themselves in the study of this interesting case, but the limits of a paper of this character forbid us taking them up. I might merely call your attention to the large quantity of blood. Dr. Hull states about two quarts exuded from a comparatively trifling rent. This fact has been repeatedly commented upon by other observers. Dr. Parry states that some of the most severe hemorrhages occur when the orifices are very small, and cites a number of instances in which from several pounds to two and a half gallons of blood have been found in the abdominal cavity after rupture of extrauterine cysts.

In conclusion, let me recall to your mind Dr. Hodge's case. His patient went to the eighth month, labor was brought on by dilating the os uteri, and the child was delivered by rupturing the septum between the uterine cavity and the fetal sac; the child was delivered by the natural passages. The child lived two hours, and the mother made a complete recovery.

DR. B. F. BAER had examined the specimens, and felt a doubt of its having been of the usual form of uterine tubo-gestation. That

form is the rarest, and is considered the least dangerous because not so liable to rupture in consequence of having the muscular tissue of the uterine wall to strengthen it. In Dr. Hodge's case, the septum of uterine tissue between the uterine cavity and the fetal sac was so thin that it could be scratched through with the finger. As the case reported by Dr. Sheppard terminated by rupture about the third or fourth month, it resembles a tubal in that particular. The question of operative interference is very interesting. In this case, as ten hours elapsed between the accident and death, an operation would be justifiable if the diagnosis could have been established.

DR. ALFRED WHELEN remarked that Miss Neilson lived ten hours after the first shock of her illness, and the published report of the autopsy stated the cause of the death to have been rupture of varicose ovarian veins.

DR. SHEPPARD, in closing the discussion, remarked that Dr. Parry classes all of this type of cases as tubo-uterine. The sac in this case was undoubtedly in the uterine wall, as the specimen shows. He had not been able to pass a bristle from the uterus into the Fallopian tube. As regards the possibility of the spontaneous stopping of the hemorrhage as a reason for postponing the operation, he would not consider it advisable to wait, for even when the laceration is very small, as in this case, the hemorrhage may, and probably will, be excessive; this hemorrhage is the cause of death in most, if not all, of the cases, and the only chance for the patient is in stopping the hemorrhage, and removing the already effused blood. If the diagnosis can be made, laparotomy is justifiable, and would be the only resort. In the report by the French physician to the Obstetrical Society, no name is given; the patient is simply mentioned as an English actress.

#### KNOTTED UMBILICAL CORD.

DR. CLEEMANN exhibited for Dr. John A. Hunter an umbilical cord tied into a complete single knot. There was no difference in size of any portion of the cord, and there had been no interference with the nutrition of the fetus. Dr. Hunter had not been present at the birth of the child, but had come in soon afterwards, and in tying the cord and removing the placenta he noticed the knot. In a case reported by Dr. Wm. F. Jenks to the Society, a failure of the fetal heart was noticed by auscultation; the child died in utero, and the knot in the cord was suggested as a probable cause of the death of the fetus. Such a knot as is seen in Dr. Hunter's case might be formed during parturition if a loop of the cord was around the child's neck and it was loosened, and the body allowed to pass through it in the process of extraction.

DR. MONTGOMERY thought that such a knot, if existing in utero, might develop a murmur that could be discovered by auscultation.

#### ACUTE HYDRAMNIOS.

DR. E. E. MONTGOMERY remarked that although dropsy of the amnion is a quite frequent condition, that above named is exceedingly rare. For this reason he has felt that the following case was worthy of record: June 4th, 1883, he saw Mrs. P., in consultation with Dr. Chase. She was pregnant for the fourth time. In the

one preceding this she had miscarried. Her last menstruation occurred December 10th, 1882. In her former pregnancies she had been quite small, carrying the fetus low down. This time the abdomen was larger than formerly at the same period, but she continued without any special discomfort until one week ago, when, without any assignable cause, the abdomen began rapidly to increase in size, and continued to do so. The increase has been attended by pain, tenderness, difficulty in breathing, entire loss of sleep for three days, loss of appetite, and scanty flow of urine. She has been obliged to maintain a sitting posture, as lying down greatly increased the difficulty of breathing. They examined the urine, but found it free from albumen. The abdomen was distended more than we would expect to find it at full term. The tumor projected well forward and upward, and a little more prominent to the right. It was perfectly regular in outline. The skin of the abdomen was smooth, tense, and glistening, and could not be pinched up over the tumor. It was quite tender to pressure. Short-waved fluctuation was distinct over the whole surface, percussion was dull, a slight tympanitic resonance could be determined in both inguinal regions. No part of the fetus could be distinguished by abdominal palpation. In fact, all the external signs were those of an ovarian tumor. They imagined they heard the heart-sounds, but so indistinctly as to be uncertain. She said she had felt the fetal movement for several days very slightly. Per vaginam the cervix was found dilated, the os open so as to admit two fingers to enter it. The vertex of a fetus was felt presenting, and, singularly, was but slightly movable.

Considering the rapid enlargement in a few days, the extreme discomfort of the woman, as well as the imperilled circulation and the extreme improbability of the woman or fetus surviving until the latter had reached a viable age, they concluded the best course was to induce premature labor, and, from the urgent need of relief, to cause it by rupturing the membranes. This he did, and on the evening of the same day a stillborn fetus was extracted. The upper part of the abdomen still continued almost as large as before. Examination per vaginam revealed the membranes of a second child. The rupture of these was followed by a gush and discharge of an enormous quantity of water. The second fetus and the placenta were soon extracted. The latter was single with two cords. One cord appeared to have only a membranous attachment, but closer examination showed that it had been torn off from the base of the other cord. The quantity of liquor amnii was so great that it soaked through folded quilts, mattress, floor, and ceiling, and dripped upon the floor of the room below. The uterus contracted firmly, and the patient was at once relieved. The children were both males, and well-developed for the sixth month; the second child lived a few minutes.

The fixed position of a fetus in the os in these cases has been given by McClintock as a sure indication of a plural pregnancy,



but I must confess that this did not occur to me at the time, though I was unable to account for the anomaly. The existence of a single placenta in twin pregnancies is said always to be accompanied by children of like sex; this theory is here confirmed as far as is possible by one case. As to the cause of the condition authorities greatly differ. Gervis, in *St. Thomas' Hospital Reports*, brings the causes under three heads: 1st. Cases due to inflammatory conditions of the amnion. 2d. Cases where the decidua has been found diseased and hypertrophied, but the amnion healthy. This will cause effusion into the amnion by transudation owing to disturbed circulation. In these cases the fetus suffers, and may atrophy. 3d. It may arise from some maternal blood dyscrasia of uncertain nature, but evidencing itself by the same condition recurring in successive pregnancies in the same patient. Puerperal albuminuria may be the cause, and comes under this head. Simpson says disease of the placenta is likely to recur in the same individual. Savage asserts that an edematous condition of the placenta is present in all cases of hydramnios. McClintock found a morbid condition of the placenta in every case. Mercier always attributed it to inflammation of the amnion. Others have ascribed it to obstruction of the fetal portal circulation, or in the cord giving rise to transudation into the sac from the surface of the cord. Hydramnios greatly endangers the life of the fetus. Of forty-three cases collected by McClintock, in which children were born where this condition existed, twenty were stillborn, sixteen of these had ceased to live for some days or weeks before labor, eleven of those born living died in a few days. Of thirty-three cases, four mothers died, showing a high maternal mortality.

In this patient, the success of the treatment was greater than expected. As the distention had been so rapid, they feared loss of power in the walls of the uterus, and a consequent long first stage and liability to hemorrhage. It becomes an important question to decide whether they were justified in undertaking so promptly the induction of premature labor, but they felt that the probability of the death of the fetus and the danger to the mother certainly in this case justified the procedure.

DR. B. F. BAER read the following

SUPPLEMENT TO THE PAPER ON THE EFFECT OF THE OPERATION FOR  
THE RESTORATION OF THE LACERATED CERVIX UTERI ON FERTILITY,  
CONFIRMATORY OF THE VIEWS THERE ADVANCED.

He there expressed the conviction, based upon his own experience, that sterility did not follow as a result of the operation, as had been asserted, but because the pathological conditions which almost constantly exist with the laceration were frequently not relieved, and this applied especially to the old cases. He there made this statement: "The longer the time which has elapsed between the occurrence of the injury and its repair (pregnancy being absent during this time), the greater and more permanent will be the

changes in and about the uterus, which almost necessarily result in a continuance of the sterility after the cervix has been restored;” and he also said that if five years or more had expired between the occurrence of the injury and its repair, sterility would be likely to remain. In support of this, he reported twenty-seven cases, of which number thirteen had been sterile from six to sixteen years. Of this number, not one has become pregnant since the operation; but of the eight cases in which pregnancy had occurred within two to five years previous to the operation, he reported four that had become pregnant, and he now adds two more.

*Case V.*—Mrs. X., aged thirty-two years of age, mother of three children, youngest three years of age, complained of severe metorrhagia every three weeks, and profuse leucorrhea in the intervals, together with a dull aching pain in the lumbar region and pelvis and a sharp spasmodic pain in the bladder, which caused an almost constant desire to micturate. She had lost weight, was anemic and nervous, and had so many obscure aches and pains that the doctor took refuge in writing the words “general hyperesthesia from nervous exhaustion.” Physical examination showed the perineum to be lacerated to the external sphincter ani muscle, but not through it. The cervix uteri was torn bilaterally to the vaginal attachment, but not much hypertrophied. The body of the uterus was only slightly enlarged, but its cavity was relaxed and granular. On January 30th, 1881, after four weeks’ preparatory treatment, he operated on the cervix and secured a good result. He was made anxious on the second day after the operation by a rise of the temperature to 102°, which, however, subsided to the normal by the next day. This rise he ascribed to the use of the curette just before operating, which he now thinks ought not to have been done. This is the only instance in which he has observed a perceptible increase of temperature after this operation. This patient objected so strongly to the use of the catheter that he allowed her to pass her urine spontaneously. Since union was perfect here, he allowed his next patient to do the same, with a like good result, and this has been his custom ever since. It was his purpose to restore the perineum, but she was so much benefited that she refused to permit it, and returned to her home in Michigan. A communication received a few weeks since informed him that she was spontaneously delivered at term six months ago.

*Case VI.*—Mrs. M. has had three children at term and one miscarriage, the latter two years previous to February, 1878, at which time she first consulted him. She complained of a dragging pain in the back from the sacrum to the nape of the neck, with menorrhagia and leucorrhea. The neck and body of the uterus were hypertrophied, soft, and tender, and the former was badly torn on both sides; the mucous membrane was everted and abraded; sound entered four inches. February 17th, 1880, he operated for the lacerated cervix; union was immediate. In his case-book, October 25th, 1881: “This patient has been in excellent health since

the operation: whereas, I had pursued the ordinary local treatment at intervals two years before it with only temporary improvement." She is now in the fifth month of gestation. This makes seventy-five per cent of pregnancies following the operation of the eight cases of this class.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

*Meeting Wednesday, June 6th, 1883.*

DR. GERVIS, *President, in the Chair.*

### SARCOMA OF OVARY.

DR. GALABIN (for DR. ELDER) showed a tumor of the right ovary having the microscopical characters of spindle-celled sarcoma, which had been removed from a woman aged fifty-five.

### ANTEFLEXION WITH HYPERTROPHY OF UTERUS.

DR. GRAILY HEWITT (with MR. A. Q. SILCOCK) exhibited a specimen of general and considerable congestive hypertrophy of the uterus, with acute antelexion, and an ovarian cyst. The patient was aged forty, and sterile. The enlarged uterus nearly filled the pelvis: it was adherent on all sides, and acutely antelexed. It weighed twenty ounces. There was a kind of dilatation of its cavity just above the angle of flexion. There was no evidence of separate fibroid formation, but it was a symmetrical hypertrophy of the whole uterus. No doubt, the enlargement had existed for years, bringing about interference with the circulation in the uterus and pelvis generally. Dr. Graily Hewitt had seen cases analogous to this during life, but the large size of the uterus in this case rendered it almost unique.

DR. HEWITT also showed an acutely antelexed uterus from University College Museum. This uterus was in miniature very like the large specimen.

DR. ROBERT BARNES had recognized cases of this kind clinically, and treated them successfully, by the use, for several months, of iodine injections (1 in 8). The iodine passed by osmosis through the body of the uterus, checking growth, promoting absorption of the hyperplastic tissue, and thus gradually reduced the uterus to the normal size, and effected a complete cure. He had in one case seen iodism produced, proving that the iodine went through the uterine wall.

THE PRESIDENT asked where Dr. Hewitt drew the line between congestive hypertrophy and myo-fibromatous growth. The naked-eye appearances of the specimen closely resembled those of a fibroid.



DR. HERMAN pointed out that in the second specimen slight tation of the uterine cavity was produced by the way in which the specimen was mounted.

MR. LAWSON TAIT thought that, if the case had come under his care, he would have regarded it as an ordinary uterine myoma. The presence of ovarian cysts was important; for he thought that, if they had been removed, the uterine tumor would have been cured.

DR. HENRY BENNETT could testify to the value of iodine in chronic inflammation, with hypertrophy, of the cervix, extending or not to the body of the uterus. Iodine applied to the skin left no permanent marks. He applied iodine solutions freely to the cervical canal, but did not inject them into the uterine cavity. The cavity of the body was separated from that of the cervix by a sphincter, which was closed in health. The injection of fluids by a syringe the nozzle of which passed beyond this sphincter was not free from risk. He had had one case of fatal peritonitis, and had repeatedly seen serious symptoms follow it, probably from the fluid passing through the Fallopian tube into the abdominal cavity.

DR. MURRAY did not think injecting the uterine cavity was free from risk. He had seen instant pain and subsequent inflammation follow it; and the late Dr. Tyler Smith had mentioned to him a similar case.

#### ADHESION OF POLYPUS TO VAGINAL WALL.

DR. POTTER showed a polypus the size of a small hen's egg, growing from the body of uterus by a short, thick pedicle, and inseparably fixed by adhesion to the vaginal wall.

#### PYO-SALPINX.

MR. LAWSON TAIT showed specimens of pyo-salpinx removed from two patients. In one, the cause was not known, and the symptoms had only lasted a few weeks. In the other, the symptoms, which were constant pain, aggravated by menstruation and marital intercourse, followed confinement, and had lasted ten years. Both patients were recovering.

MR. KNOWSLEY THORNTON showed a large double pyo-salpinx, one tube containing half a pint of pus, removed from a single woman aged thirty. The ovaries were left. The patient was doing well.

#### MYXOMATOUS DEGENERATION OF UTERINE FIBROID.

DR. GODSON exhibited a tumor removed from a patient aged sixty-one, the upper part of which, attached to the anterior uterine wall, presented the characters of an ordinary sloughing fibromyoma, while the lower part was myxomatous. He thought this kind of degeneration of fibroid was very rare.

#### A CASE OF ACUTE GANGRENE OF THE VULVA IN AN ADULT, WITH REMARKS.

By DR. HERMAN.—The case related was one of acute gangrene of the skin of both labia, the perineum and margin of anus, and the mucous membrane of the lower part of vagina and urethra, occurring in a patient aged thirty-seven, without clearly discoverable cause, the gangrene being apparently the result of acute inflammation. The author had collected all the published cases that he could

find of similar gangrene of the vulva in adults occurring independently of venereal phagedena. He found that they might be divided into four classes: 1st, those occurring in patients suffering from acute diseases, viz., the specific fevers and cholera; 2d, epidemic puerperal gangrene, which has occurred in hospitals only, beginning as isolated round or oval sloughs on the inner surface of the labia, the process usually stopping with the separation of the sloughs, though sometimes going on to extensive destruction of the parts; 3d, acute gangrene occurring independently of contagion, and beginning with acute inflammation of the external genitals, more superficial than noma, and not spreading like erysipelas; 4th, spreading gangrenous cellulito-cutaneous erysipelas. The author did not think there were grounds for a positive conclusion as to whether the differences between these classes were essential differences in the morbid process, or merely minor differences due to the circumstances of origin; but he thought probably the latter was the case.

THE PRESIDENT thanked Dr. Herman for his paper, and remarked on the rarity of the malady described.

DR. CLEVELAND suggested that the gangrene in Dr. Herman's case might have been caused by a chill occurring in a woman ill-clad and of broken-down constitution.

DR. FENTON JONES suggested that the gangrene might have arisen from local septic inoculation, occurring through chafing and the use of a dirty napkin.

DR. MATTHEWS DUNCAN referred to sloughing cellulitis of the scrotum in males, and analogous cases in the female. He had seen a fatal case of puerperal sloughing of the vulva resembling hospital gangrene, with cystitis. Sloughing of the hymen and tags of lacerated tissue was often seen. He had seen a case of linear sagittal sloughing of the perineum after a difficult labor. He had seen both labia gangrenous from the pressure of a large protruded fibroid.

DR. HICKINBOTHAM had seen two cases, one occurring in a woman lying in a room in which were cases of scarlet fever, the other in a woman whose husband was the subject of erysipelas of the scalp.

DR. HERMAN said that in his case the skin seemed to be the seat of disease, rather than the cellular tissue. The puerperal gangrene occurring epidemically seemed to run a more acute course than ordinary hospital gangrene. The sloughing in it affected uninjured tissue, and was quite distinct from the common sloughing of tags of lacerated tissue.

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## PROCEEDINGS OF THE NEW YORK ACADEMY OF MEDICINE.

### SECTION IN OBSTETRICS.

*Stated Meeting, May 24th, 1883.*

ALEXANDER S. HUNTER, M.D., *Chairman.*

#### THE TREATMENT AND CURABILITY OF CHRONIC UTERINE CATARRH.

DR. PAUL F. MUNDÉ read a paper, prefaced with the statement that the extreme prevalence and the vital importance of chronic catarrhal inflammation of the uterine cavity as regards the possibility of conception, as well as the acknowledged difficulty experienced in curing the disease, had led him to offer a few remarks on this subject.

The principal object of the paper was to insist on perseverance and on the adoption of efficient measures as absolutely indispensable to success in the treatment of this affection. The causation and pathology, and special symptoms of the disease did not come within the scope of the paper.

The opinion has hitherto largely prevailed, both among specialists and general practitioners, that a real chronic endometritis or endocervicitis (the latter is a hybrid word) is practically incurable. The opinions of Thomas, Sims, Schroeder, and others were then quoted concerning the intractability and incurability of the affection.

Before speaking of the treatment, Dr. Mundé directed attention to the significance of the disease and the physical conditions under which it occurs.

First. *Significance.*—Whether there be a chronic corporeal or a chronic cervical endometritis, the result as regards conception is usually the same; it rarely takes place. If conception occasionally has taken place when this condition has been present, it has been rendered possible by the accidental discharge of a cervical plug of mucus shortly before coition, or by reason of treatment (possibly by vaginal injections).

Although sterility is the chief symptom of chronic endometritis, the constant discharge, the subacute vaginitis and vulvitis, frequently entailed by direct contact with the uterine secretions, the menorrhagia not uncommonly produced by the uterine hyperemia, and the ultimate general anemia and neurasthenia are even more distressing and annoying. The significance of this disease varies according as it occurs in the virgin, in the married nullipara or in a woman who has borne children. In the nulliparous married woman, it may oftentimes be difficult to understand the reason for this sterility. In these cases, the following condition of



affairs was described: The narrow external os usually entails a retention of normal cervical discharge; this retention gradually produces dilatation of the cervical canal, and the accompanying retention causes hypersecretion until the cervix assumes a bulbous shape, and its cavity is filled with thick, viscid, discolored mucus. When the external os is dilated by the passage of the sound, and the cervix is compressed by the examining finger, mucus gushes out in a thick stream; the sound easily detects the presence of a large cavity within the narrow external os. This condition is not at all unfrequent, and is as unailing a cause of sterility as it is curable by prompt and proper treatment.

Dr. Mundé then described briefly the plan of treatment which he had employed for several years, and which he had found to answer fairly well in the majority of his cases. He began by saying that it was utterly useless to expect to cure a chronic uterine catarrh by such mild remedies as the plain or even compound tincture of iodine, or solution of nitrate of silver, even one drachm to the ounce, or pure carbolic acid. You will certainly fail in chronic coporeal metritis, and in the cervical variety you will merely increase the discharge.

If the patient is a virgin or a nulliparous married woman, it will generally be found necessary to enlarge the external os. This is essential for two reasons. First, to give vent to accumulated endocervical mucus; second, to allow the ready application of remedies. To accomplish the first, expose the cervix through Sims' speculum—it can be imperfectly done through the ordinary cylindrical speculum—and then with a Sims' uterine knife, or a simple bistoury, or straight scissors, the anterior, posterior, and lateral lips are divided by incisions about one-fourth of an inch in depth, going completely through the mucous membrane, and making the os nearly or quite as large as the calibre of the cervical cavity. It is imperative to *remove* the four flaps of mucous membrane thus formed in order to prevent the speedy closure of the incisions; seize each flap with a fine tenaculum, and trim it off with curved scissors, so as to leave a funnel-shaped external os. It is not necessary to perform this operation in every nullipara. The next step is to destroy as thoroughly as possible the cervical glands which furnish annoying mucous secretion. To do this effectively, once and for all, take a sharp curette with cutting edge (Sims' or Simon's) and scrape the whole cervical canal up to the internal os, until the creaking sound tells you that the sub-glandular base has been reached. Do not be afraid to do this thoroughly. When the whole of the canal feels smooth, apply on a cotton-wrapped applicator, or, better, a wooden or glass rod, pure nitric acid, being careful to protect the external surface of the cervix and also the vagina by packing cotton underneath. This application must be so thorough as to give the cervical canal a charred, yellow appearance, so that not even a drop of blood issues from it. In some instances, he had applied the iodized phenol (equal parts) or saturated solution of chromic acid, but he

preferred the nitric acid as more efficient and scarcely more painful. The operation should be performed at the residence of the patient, and the latter kept quietly in bed for a day or two at least. Three cases of cellulitis following this really trifling operation have induced him of late always to insist on this precaution.

While applications above the internal os are more liable to produce shock and peritonitis, those to the cervix are more frequently followed by inflammation of the pelvic cellular tissue. In spite of this danger, the severe measure (sharp curetting and nitric acid) is by far the most advisable, because it is the most effectual, and he had never as yet found it necessary to substitute the actual cautery so warmly recommended by Sims.

As for catarrh of the endometrium proper, he seldom used a sharp curette above the internal os, except when it is for the purpose of removing vegetations or hypertrophied mucous membrane of unusual growth, or where the dull curette has not prevented a return of the disease.

An indispensable condition to the safe and complete application of caustics to the endometrium is the patulousness of the uterine canal, particularly of the internal os. Whether the application be made to the whole of the uterine canal or to the cervix alone, it must be remembered that the more powerful the caustic the longer the time before the slough separates. That of nitric acid usually takes from five to seven days; iodized phenol or pure carbolic acid, three to four days; tincture of iodine, two days. Not until the slough has separated should a second application of a mild nature be made. It should be remembered, however, that so long as constant applications of caustic are made to a raw surface it cannot heal. Hence it is well, after a couple of weeks of steady treatment, to allow the patient a week's rest in order to give nature a chance to heal the wound; if she then fails, we can begin again, and perhaps a third or a fourth time.

The cases he had found the most amenable to treatment and most favorable for a permanent cure were those in which the uterine catarrh is chiefly maintained by a narrow external os or internal os, or where a laceration of the cervix and a consequent hyperplasia of the follicles is present. The most obstinate are those cases of catarrhal endometritis and endocervicitis in which the external and internal orifices are anatomically normal, and no special hyperplasia of the os or mucous membrane can be detected. In these cases permanent relief seemed hopeless. The intelligent specialist and general practitioner need scarcely be told that accompanying anemia must receive proper attention, and active hyperemia of the sexual organs should be prevented by abstinence from sexual congress during the local treatment described.

DR. W. GILL WYLIE said that he agreed with the author of the paper in many respects, while he differed with him upon several other points. In the first place, he had not met in his practice with quite so many cases such as had been described by Dr. Mundé

and others as incurable. There are cases of endocervicitis which undoubtedly are incurable unless we destroy the mucous membrane, but he did not think they were so common as had been supposed, and the same could be said of endometritis.

Although the subject of etiology did not enter into the paper, there was one point to which he would direct attention, namely, he believed that many of the so-called cases of incurable uterine catarrh were due to the general condition of the system, or to a diathesis, and that although the catarrh might be improved temporarily, if the diathesis was permitted to remain uncorrected, the local condition will return. Dr. Wylie also believed that uterine catarrh was more frequently due to disease of the Fallopian tubes than had heretofore been considered. He had lately had two cases of this character under observation. In one, the patient had been treated for several years, but still there was a purulent discharge in the vagina, especially when the patient was upon her back. After treating her for a little time by the use of the glycerin and alum tampon, which, not only by pressure, but by producing an alterative change, affected the parts, he was able to readily diagnosticate this condition of the tubes, and after they had been removed he found exactly the same kind of discharge from the tube which he had always found in the vagina. He had seen other cases in which the discharge was mechanical in character, and came from the tubes.

His method of treatment for uterine catarrh was not so heroic as that which had been described by Dr. Mundé. If a patient came to him with cervicitis, with the slightest tenderness, he commenced with simple applications of pure glycerin upon cotton, not oftener than once in three days. He followed this for a time with a saturated solution of alum in glycerin, to which had been added a very small quantity of carbolic acid, making the applications once in three or four days. Then for the first time he passed a sound, and, as a rule, especially if the patient has not borne children, it will be found necessary to dilate the cervical canal. For that purpose he employs Sims' instrument, dilating first the external and then the internal os to some extent, and then begins the treatment of whichever cavity is diseased. If the mucous membrane of the cervix is extensively diseased, after trying astringents, although they did not do much good, he generally uses the curette, particularly if the patient complains of menorrhagia. After using Sims' curette thoroughly, he then makes an application of pure carbolic acid, and rarely uses anything more powerful than this. He does not like to use nitric acid because of the possible contraction of the eschar. He was very certain that the cervix did contract after the use of the actual cautery. One reason why a cure is not effected was that the curette and the local applications were, too frequently, not thoroughly done. The same remarks applied when the lesion was higher up. Applications to the uterine cavity, without dilating to some extent the internal os, were of no use whatever. The application should be made through the curved silver tube, so that it can be delicately touched to every point, and if so done, seeing that each little delicate recess was touched with the local application, many of these cases can be cured which have heretofore been regarded as incurable. He did not believe that there were many cases in which nitric acid was necessary above the os internum. As a rule, in his hands carbolic acid accomplished all that could be desired. If the uterus is soft and large, he uses iodine. If the uterus



is indurated and hard, being in the position of anteversion, and the patient complains of trouble about the bladder, etc., having been about town under treatment for years, he had found that these cases were about the easiest ones which he had to treat, because they had been almost universally treated without enlarging the internal os. But in these cases, even with the uterus enlarged and the cervical canal open, he always prepared the parts by removing tenderness with the applications of glycerin and alum, and, if the cervix was not open, subsequently dilating it with the Sims dilator, observing throughout the strictest rules of cleanliness, wetting the instrument with some antiseptic, as carbolic acid or iodine. Frequently these cases will be relieved within a week, and can be cured within six weeks by adopting this plan of treatment. He really thought that it was the method of applying the treatment rather than any special treatment of itself, as it was in many other cases, which makes it successful. He also thought that if the general condition of the patient was neglected, probably the local condition would return, and of all the diatheses which might give rise to it, he thought that the rheumatic was the most active.

DR. L. WEBER said that he was glad to hear that Dr. Mundé regarded his cases as cured, for the time being at least. The treatment which he had adopted for several years was that practised by Amann, of Munich. After dilating the internal os with the tupelo tent, with the thorough application of the curette, Sims' in preference, he had followed the plans of Professor Amann in using mitigated nitrate of silver, making a thorough application to the mucous surface. This he had usually done with the ordinary Lallemand's porte-caustique. He had not seen any disagreeable results from this method of treatment. He had known of two deaths following the use of nitric and chromic acid. Whether he had absolutely cured these cases he was unable to say positively, but he knew that they had received a great deal of benefit from the treatment which he had adopted.

Dr. Weber also believed that there was an undoubted connection between these intractable catarrhs and the general condition of the patient. He should prefer to lay stress upon the intimate connection between this local condition and the scrofulous or tuberculous diathesis rather than gout or rheumatism. Again, in at least half the cases he had seen, such as the general practitioner very often encounters, the disease had followed early abortions. He related one such case, in which acute tuberculosis developed after miscarriage, and the patient died within two years.

DR. A. S. HUNTER said he had never used nitric acid within the uterine cavity or the cervical canal. It occurred to him that we should consider the existing cellulitis, if any were present, and adopt measures to remove it entirely before proceeding further; then consider the condition of the uterus. If subinvolution is present, he had been accustomed to resort to hot water injections, the use of local application of glycerin, and was fond of applying a sponge tent without curetting. The sponge tents he had made with the utmost care, prepared antiseptically, and just before their introduction the surface was wet and covered with soap and then rolled in finely powdered salicylic acid. After introducing the tent, it was allowed to remain forty-eight hours, the patient in the mean time being confined absolutely in bed, the bowels having previously been moved freely so that it was not necessary for the forty-eight hours to rise for this purpose. In many cases after the tent had been thus applied and removed, the catarrhal discharge

had ceased entirely, and with it the condition of ubinvolution had disappeared. In the event of failure, he then resorted to more active measures. In those cases in which the uterus is anteverted he used tents, and, after removing thoroughly with the curette the degenerated mucous membrane of the uterine cavity, thoroughly wiped away all the blood, and removed every particle of secretion. he applied the strongest solution of carbolic acid, and he had been entirely satisfied with the results.

DR. MUNDÉ, in closing the discussion, remarked that undoubtedly the scrofulous diathesis had a great deal to do with the production, or at least the continuance, of the disease under consideration. He was particularly pleased with Dr. Weber's statement concerning one point in the etiology of the affection, namely, that in the large proportion of the cases it followed early abortion, by which he supposed Dr. Weber meant subinvolution which usually accompanies these cases. That had also been his experience, but, as had been remarked, the etiology of the disease had not entered into the scope of his paper. His principal object was to point out that many of these cases which had been intractable to treatment, did not improve under *mild* applications, no matter how conducted, that there is a certain proportion of these cases which get well under *heroic, active, and persevering* treatment; at least get cured sufficiently long to get rid of their sterility, and if that was the prominent feature in the case, the great object of treatment was accomplished. Besides, many of them were cured of the uterine catarrh. Dr. Wylie had laid stress upon the preparatory treatment. This was perfectly correct. Dr. Mundé did not speak of preparatory treatment to any very great length because it was his special point to discuss active treatment for the cure of the disease. Preparatory treatment is quite as important, and in cases where the uterus is immovable it may be one of the essentials, but where the uterus is perfectly movable it may be as well perhaps to go on with the heroic treatment at once. As for the class of cases to which Dr. Wylie had referred, Dr. Mundé would not touch one of them with the curette or with nitric acid. If there existed cellulitis of the remotest origin, he would not apply either the curette or nitric acid until at least he had tried all other methods without success. With regard to the objection to the use of nitric acid because it was liable to be followed by contraction of the cervical canal, Dr. Mundé admitted that this contraction does take place, but he did not care for this because in these cases the canal is, as a rule, already too large, and a moderate amount of contraction is desirable. But it should be recollected that he did not recommend the application of the nitric acid sufficient to make a deep slough. With regard to carbolic acid having been sufficient, he could only say that he had occasionally succeeded in the use of this remedy, but he had more frequently failed. He had not used either the actual cautery or the galvano-cautery. He thought that Dr. Hunter's use of salicylic acid on sponge-tent was an excellent one, but suggested that the results possibly might be due to the effect of the acid quite as much as to the effect produced by the sponge tent.

One important point he had neglected to mention in his paper, and which it might have been well to have incorporated, namely, the contra-indications to the use of any of these strong applications to the cervical and uterine cavity, contra-indications which might be said to be the same as those to sounding or any intrauterine treatment.

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

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*Stated Meeting, May 28th, 1883.*

DR. W. GILL WYLIE read a paper on

### THE USE OF ANTISEPTICS AFTER ABORTION AND LABOR,

in which he stated that in 1870 and 1871, while an interne in Bellevue Hospital, he saw much of septicemia in surgical cases and something of the same in puerperal cases. Under the teachings of the late Professor James R. Wood, he became a believer in carbolic acid, and by its free use subsequently, while serving in the lying-in wards, he delivered thirty-six women without the occurrence of a case of puerperal fever, and he believed that this result was due to the free use of carbolic acid, and the burning of all sponges, rubber cloths, etc. All these women had some rise of temperature, but none over 102° F. at any time. In 1872 Dr. Wylie saw Dr. Lister at work in his wards in the infirmary at Edinburgh, and became a convert to his antiseptic methods, and had since in private practice adopted the antiseptic plan, especially following the practices and teachings of Lister in all cases of labor. Nearly without exception the temperature after confinement in his practice had not risen above 100° F. There had not been even a case of so-called milk fever, and the well-known odor of the lying-in woman had been absent. The method is as follows:

*First.*—Examine locally every case some weeks before labor; have a trained nurse several days before confinement is expected; if lochia are present, warm vaginal douches of carbolic solution, 1 to 40, are given twice a day, and in all cases, as soon as the first symptoms of labor begin, the vagina and vulva are thoroughly washed with the same solution.

*Second.*—Remove all useless and old stuffed furniture from the room; disinfect with the spray of carbolic acid everything that remains in the room; see that a large supply of napkins and bed linen are on hand, all of which are carbolized with the spray immediately before being used; change the linen every day; also have two sets of blankets; air them and use them alternately; wash the hands and all instruments in a solution of carbolic acid, 1 to 20.

*Third.*—When labor begins, commence the production of the carbolic spray, and after labor every napkin is carbolized, or carbolized muslin or oakum is used to catch the lochia, and changed according to the discharge every hour or two, night and day.

*Fourth.*—Immediately after labor, wash the external parts thoroughly with the 1 to 30 solution of carbolic acid and give vaginal



douches from two to four times a day. This is kept up faithfully for six or ten days, as may be required.

*Fifth.*—The test for the thoroughness of this method is that at no time should one be able to recognize by the smell the odor such as usually characterizes the lying-in woman.

For cases of abortion endeavor to carry out the same line of practice. Dr. Wylie then read the history of several cases.

He had reached the conclusion that it was best to consider the uterus after an abortion precisely as surgeons of to-day regard a punctured wound, and just as likely to be poisoned and beset with dangers when neglected or badly treated. He proceeded, therefore, upon the following plan: First, that septic matter must be excluded with great care, and that antiseptics are of great service in preventing infection; second, that perfect drainage is just as essential as in a severe contused and punctured wound; that not only versions, and especially flexions, may cause retention of lochia, but contraction and swelling of the os internum very frequently is an active cause in preventing a constant and free discharge; third, that when septicemia has begun within a reasonable time, say within ten or twelve hours after the first chill or high temperature<sup>1</sup> in almost all cases the patient may be saved by perfecting the drainage and by washing out the cavity either of the vagina or the uterus, as the case may be, by frequent douches of a solution of carbolic acid of a strength of from 1 to 40 to 1 to 20; fourth, that medication, except so far as it keeps up the strength of the patient, has little or no direct effect, and that the washing out with the carbolic acid not only removes or renders inert the organism on the surface of the wound or cavity, but in all probability sufficient carbolic acid is absorbed locally into the surrounding tissues to weaken if not to stop the active reproduction of the organisms or the generation of poison associated with them.

He was fully aware that many cases very soon reached a stage where neither local nor any other treatment could arrest the disease, such as those where the poison has extended rapidly into the connective tissue, or has been carried a distance from the surface by the lymphatics or the veins, and started a new centre of local poisoning. But he believed that most of these hopeless cases began as simple ones, and if treated in time would never reach such a dangerous stage.

He did not advise intrauterine injections in all cases. If the disease is confined to the vagina, apply antiseptics to that canal, but do it often enough to keep up their influence for at least twelve consecutive hours. Usually, if puerperal fever has lasted for several days, or if the symptoms are dangerous, it would be better not to delay washing out both the uterus and vagina, and do it vigorously and faithfully, and do not be satisfied with the uterine injection twice or three times a day, or even every three hours. He favored intermittent irrigation instead of continuous irrigation, for the following reasons: First, it is more readily and with

greater safety carried out; second, it gives the parts, if not the patient, a little rest; third, douching at short intervals, we can use stronger solutions with less risk of poisoning with the antiseptic than when the continuous stream is employed.

What should guide us in the use of antiseptics after abortion? The first symptom is usually a chill; or chilly sensation, arrest of the lochia, and then a rapid rise of temperature. If in such a case an extensive laceration of the perineum, or cervix, or wound of the vagina were found, he would wash out the vagina with a solution of carbolic acid, 1 to 20 at first; after this give douches regularly, every fifteen minutes or half an hour, for three or four hours, of a solution of 1 to 40. If the temperature then fell gradually, he would continue the douches in the same manner every twelve hours or more; but if, notwithstanding these vaginal douches, the temperature should continue to rise, or go up rapidly after lessening for several hours, he would at once begin intrauterine douches, giving one of 1 to 20; and after this douches every half-hour of 1 to 40, until the temperature fell to normal.

When the injection returns clear and remains so for several injections, almost invariably the temperature is found normal.

It is especially important, in giving the intrauterine douche, to be certain that the carbolic acid is pure, and he insists upon having Calvert's No. 1.

The histories of several cases were given which he had seen in consultation. Dr. Wylie also referred to the histories of nine cases which he had treated successfully in Bellevue Hospital.

His experience with the dangers of intrauterine injections was limited. In one case shock was produced, and it was afterward found that the solution had entered the peritoneal cavity through the Fallopian tube. The patient, however, recovered. In some cases shock was produced without any apparent explanation. If a large tube, such as Chamberlain's, is used after the os internum is well contracted, the instrument may be hugged so closely that the uterine cavity will be filled with the fluid injected. Under these and similar circumstances, of course, the solution might be forced through the Fallopian tube into the peritoneal cavity, or a clot might be forced through a vein or sinus and do harm. But if a gum-elastic catheter was used, of sufficiently small size to pass very readily, with a thread tied around it two and a half inches from the fenestrated extremity, indicating the distance to which it should be introduced into the uterus, not only would the fluid escape, but very frequently large threads of débris, clots, etc., would be brought away.

In those cases where the uterus was flexed, or the os firmly contracted, and where there is imperfect drainage, the tube can be left in the uterus, cut off close to the vulva, and a piece of soft rubber tubing attached when the injection is given. When left in this way it served as a drainage-tube, and the lochia should be caught by a carbolized napkin or dressing at the vulva.

One special object which the author had in reading the paper was to advocate the frequent and long-continued use of antiseptic dressings, when once begun, in cases of puerperal septicemia, and to make it plain that three or four vaginal or intrauterine injections given in twenty-four hours is not sufficient to do much good, and was likely to result in the disuse of the best, and in many cases the only, means of preventing death from septicemia; that vaginal and intrauterine injections of carbolic acid of a strength of from 1 to 40 to 1 to 20, will save almost all cases when begun early, and that it will often save apparently hopeless cases.

DR. PAUL F. MUNDÉ said that for several years he had had most positive convictions on the subject, and had followed a decided practice in the treatment of puerperal septicæmia. Since Dr. Chamberlain introduced the long glass tube known by his name, he (Dr. Mundé) had made it a rule to inject every puerperal uterus as soon as the temperature rose above 102° F., whether the lochia became offensive or not. He continued these intrauterine injections (of a two-per-cent solution of carbolic acid) three or four times daily until the temperature was permanently lowered, or until their inefficiency became evident. He had thus repeatedly reduced the temperature from 105° to 102°, from 103° to 98°, and the pulse in proportion. He had seen the temperature remain down after a while—but, again and again, he had seen it go up, and finally stay up, in spite of the injections. It was true, he had not repeated them so often as Dr. Wylie had done, and perhaps his occasional bad results had been due to this fact. In future he would certainly follow Dr. Wylie's plan in intractable cases.

But he would like to direct attention to the fact that in all cases of puerperal septicæmia there was a time when intrauterine injections not only did no good, but were even positively injurious, viz.: 1. In cases where the lochia were not at all offensive, and the seat of infection seemed already to have spread to the parametric tissues, and to lie beyond the reach of intrauterine medication. 2. Where the injections had been used faithfully for a period of from forty-eight to seventy-two hours, with little or no benefit—certainly no lasting benefit. In both these sets of cases the disease had already advanced beyond the scope of local remedies, and in those of the second category the injections even seemed to provoke a traumatic rise of temperature; he had known the frequent introduction of the tube, and the injection of medicated fluids, to do harm, and to be followed by more or less hemorrhage. But in a fresh case of puerperal septicemia, or indeed in any case where there was a rise of temperature, especially if the lochia were fetid, his first step was to wash out the uterus, repeating it as often as the temperature seemed to require; and the results in many cases had been so surprising, so immediate, and so beneficial as to make him feel the greatest confidence in the treatment. In a few cases, it was true, it had failed, but those were mostly cases to which he had been called in consultation at a late period in their course. In the very few cases in which the injections had failed and yet the patients had recovered, the salicylate of sodium, in ten-grain doses every two hours or oftener, had seemed to produce a permanent reduction of temperature, followed by recovery even after failure with the largest doses of quinine.

DR. MALCOLM McLEAN had seen two cases in which air had been



introduced into the cavity of the uterus with almost fatal consequences, while intrauterine injections were given. At the same time, notwithstanding this objection, he regarded the recommendations in the paper as most excellent, and worthy of being commended. He believed that the temperature, which in many instances was the active agent in destroying the patient, could be reduced by this plan. He objected to leaving the catheter in the uterus during the intervals while the injection is not being made. He thought it a dangerous precedent to establish, because it was almost impossible not to have some air in the tube which might subsequently be driven into the uterine cavity. In cases of abortion he thought that swabbing the uterine cavity with a strong solution of carbolic acid answered a most excellent purpose. There is sufficient room for this, but scarcely enough, in many cases, to carry out the plan of irrigating the uterus by means of a tube. There were certain old cases of septicemia, to which Dr. Mundé had referred, which had not seemed to be benefited by the intrauterine injections. He thought it well in all such cases to be sure, if called in consultation, to find out as to whether the uterine cavity had been injected thoroughly. It may be reported that it has been irrigated thoroughly, whereas it may not have been irrigated at all, but the injection had been simply vaginal. He believed that the soft, flexible catheter was about as good an instrument as any which can be used in giving intrauterine injections, and he thought it a good plan to keep one finger in close contact with the cervix, to determine whether or not the return flow from the uterus was actually taking place.

DR. HENRY J. GARRIGUES said that, as far back as 1877, in a paper on "Lying-in Institutions, especially those in New York," incorporated in the Transactions of the American Gynecological Society, he had pointed out the great value of antiseptic midwifery, and the revolution it had wrought in the lying-in institutions of Europe. At that time, he had already adopted it in private practice, and had kept it up ever since. As a preventive, he had found it so excellent that he had not had a single case of puerperal fever in his own practice. On the other hand, he had not seen great effect from it in cases to which he was called in consultation when septicemia had already been developed.

At his appointment as Obstetric Surgeon to New York Maternity Hospital, he had introduced the preventive antiseptic measures which had answered so well in private practice, but had been disappointed, as, in spite of them, there had been much disease in the wards. On the other hand, he had seen very marked benefit from the antiseptic treatment as a curative measure, and especially from the intrauterine injections of carbolized water. He had repeated them as often as every three hours. His indication for the repetition was a new rise in temperature.

Carbolic acid was not the only antiseptic substance. Others were as valuable. Thus, in very weak patients, in order to avoid the depressing effect of carbolic acid, he had used a saturated solution of boracic acid, and been much pleased with the effect. In diphtheritic inflammation, carbolic acid was not sufficient. There, besides the intrauterine injections with carbolized water, he washed out the uterus with an eight-per-cent solution of chloride of zinc, and touched all the visible patches with a one-to-one solution of the same substance, the process to be repeated once in twenty-four hours, if necessary.

Tincture of iodine, iodoform, and a ten-per-cent emulsion of

camphor had all proved very valuable in the treatment of puerperal wounds.

In fresh abortions, a complete removal of the secundines followed by a single intrauterine injection of carbolized water had proved sufficient, in his experience. When decomposition had taken place, it became sometimes necessary to repeat the intrauterine injections.

DR. WYLIE, in closing the discussion, said that most of the points referred to by those who participated in the discussion, and the objections mentioned, had been considered and answered in the histories of cases, which he did not read, on account of lack of time. He had not seen any trouble from the entrance of air into the uterine cavity. He usually employed the gum-elastic catheter No. 12.

With regard to waiting for the offensive discharge, he thought that that was just the point where fatal mistakes were made, for the reason that the uterus might become poisoned in consequence of imperfect drainage, without the appearance of any offensive vaginal discharge. He believed that the severe cases were those which had been neglected too long, or those in which perhaps one injection had been given and not repeated until after the lapse of six or eight hours. With regard to swabbing the uterine cavity, he thought it doubtful, in very many cases at least, that every little recess among the tissues could be thoroughly reached by this method. He was unable to understand why poisoned wounds of the uterus should be considered and treated differently from any other poisoned wounds.

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## REVIEWS.

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### THE PATHOLOGY AND TREATMENT OF THE DISEASES OF THE OVARIES.

By LAWSON TAIT, F.R.C.S. Edin. and Eng., Surgeon to the Birmingham Hospital for Women and Children, etc., etc. Fourth edition, re-written and greatly enlarged. New York: Wm. Wood & Co., 1883, pp. 351.

If proof were wanting of the immense strides which abdominal surgery has taken in the past few years, this work would give it. Appearing originally as the Hastings Essay for 1873, it has now become necessary to re-write and greatly enlarge it. Its author, in this, his chosen sphere, has obtained results which none of his contemporaries can equal. It is no wonder, then, that this book which contains an account of his methods should prove of absorbing interest. Whoever reads it, and no one can afford not to, must perforce learn something, if simply the fact that nowadays the surgery of the abdomen has reached that stage where none of its viscera are beyond the justifiable, if not as yet always healing touch of the surgeon. So complete is this book, so pregnant in sound advice and good results, that no room is left for adverse criticism. The author's style is everywhere clear and straightforward. His aim is not so much to glorify himself as to impart to others the means whereby human suffering may be relieved, and human life saved. The leading points bearing directly on the recent advances in abdominal surgery will be herein noted, after having first called

attention to certain views in connection with the anatomy and physiology of the ovary and oviduct, differing from those generally accepted.

The dependence of menstruation on ovulation is not granted as proved. On the contrary, this hypothesis is deemed untenable, for the reason that ovulation begins, and often continues, long before the establishment of puberty, as well as persists after the climacteric. "It is perfectly certain that ovulation is by no means a periodic process in the sense of being monthly, and the fact that a periodic flow from the uterus is almost confined to the human race is sufficient to show that it is not in the ovaries that we have to look for the cause of this curious and objectionable phenomenon, for which no one has ever yet suggested a useful object." Further, in brief, since the flow continues month after month, in certain cases, after removal of both ovaries, the cause cannot be in them; neither can it be in the uterus, since in most cases removal of both ovaries arrests the function: the tubes then alone remain, and in Tait's as yet short experience in their removal, he has found that this causes an immediate cessation of the flow. Therefore, Mr. Tait begins to suspect that the tubes, either through their monthly movement or their structures, are the real sources of the menstrual discharge. In further corroboration of this opinion, it is noted that the tubes increase in size and become more vascular at puberty; that they shrivel up at the climacteric; and never yet has the tube been seen fastened to an ovary before puberty or after the menopause, as it certainly is between these periods. Still further, Mr. Tait has during the past few years seen the ovaries of many women whose abdomens were opened for various conditions not ovarian, and he has always found "that during menstruation the tube is fastened on the ovary, whether there be a ripe follicle at the point of adhesion or not: that both tubes were generally fastened to their respective ovaries, though in one ovary there may have been no appearance of a ripe ovisac," and finally, he has removed in two cases ovaries with their tubes fastened to them, during menstruation, and in neither case were there any ovisacs approaching maturity. These facts are certainly significant, and should make those of us who cling to the ovular theory pause and consider, if, after all, there be not weighty reasons for supposing that in the tube lies the cause of menstruation.

After a brief account of the anatomy and physiology of the ovary and oviduct, to which the chapter from which the above views have been quoted is devoted, Mr. Tait begins the subject matter proper of this work with a detailed account of errors of development and displacements of the ovaries and oviducts, salpingitis, hydrosalpinx, pyosalpinx, hematosalpinx, and Fallopian pregnancy. Attention is called to the fact that scarlet fever in youth is often the cause of incomplete development of the sexual organs. In dislocation of the ovary, after the varied means of treatment at command have been tested and found to fail, ovariectomy is indicated. Usually defective development of the ovaries is accompanied by defect in the tubes. At times in arrested development of the tubes both ends will be found occluded, whence they become cysts. In several instances Tait has found that the occlusion at the outer extremity of the tube was due to an adhesion to the infundibulum of the ovary, perhaps congenital, but more probably the result of inflammation. Such cases give rise to great suffering, and the only means of relief lies through the extirpation of both tube and ovary. Inflammation in the uterus may spread



to the tubes, and as one result the ciliated epithelium lining them becomes destroyed. The purpose of this epithelium is to propel the ova towards the uterus, as also to prevent the contact of spermatozoa with ova in the tube. Tait does not believe that impregnation normally takes place in the tube. He asserts that there is absolutely no evidence of this. If it were true, *a priori* we should expect to meet Fallopian pregnancy more frequently. When it occurs, indeed, it is likely the cilia have been destroyed by inflammation.

There are two methods of dealing with a salpingitis. The first, by drainage, is not very satisfactory, and should only be resorted to when the second method, removal, is impossible. Mr. Tait then gives the histories of some highly interesting cases where he removed one or both tubes. The features common to these cases were "a history of severe pelvic inflammation, though sometimes this cannot be ascertained with precision. Its origin is variously ascribed as from gonorrhœa, a chill or sudden stoppage of the menstrual flow, and (most frequently), inflammation after labor or a miscarriage." There is always pain after exertion or intercourse, which becomes intensified at the appearance of menstruation. In the majority of instances, menstruation is profuse and irregular. The physical signs are swellings at the seat of the ovaries with frequently distinct fluctuation. The only treatment for such cases is removal of the tubes, and this operation Mr. Tait may justly claim as his own. Of his twenty-two cases, all have recovered, and he has not found that the operation "has had any other effect than that of restoration of sexual activity where it has been lost." He has found the most common variety of the disease to be hydrosalpinx, and the least common hematosalpinx. We have in this operation of Tait's a marked advance in abdominal surgery. The removal of the ovaries, as devised by Battey or Hegar, was but a step in the right direction. Now that Tait's remarkable success proves the feasibility, as well as the advisability, of removing the tubes as well, many cases hitherto considered beyond the reach of surgical aid can be effectually relieved.

Frequently where Tait has had occasion to open the abdomen for the purpose of removing the ovaries on account of severe pelvic pain, he has found evidence of old pelvic peritonitis, and the histories of the patients have suggested recurrent attacks of pelvic inflammation. He has also noticed in several patients under his care that at certain examinations distinct tumors on either side of the uterus would exist, whilst at other examinations they would be absent. In the great majority of such cases, Tait believes the recurrent pelvic peritonitis is due to rupture of the tubes. "In the acute stage, inflammation of the tubes is a most formidable disease, and so rapidly ends in general peritonitis that we can hardly recognize the necessity for interfering before it is too late to do anything. I have seen several fatal cases of peritonitis, which undoubtedly had their origin from inflammation of the Fallopian tubes, and which ought to have been treated by abdominal section. Indeed, I do not think I shall again willingly allow a case of peritonitis to die without an effort to save her by an operation. . . . In three cases of chronic peritonitis, I have done this, and cured the patients completely."

Mr. Tait next considers oöphoritis, peri-oöphoritis, cirrhosis, and abscess of the ovary. The distinction is made into: 1. Ovarian hyperemia; 2. Acute ovaritis; 3. Chronic ovaritis. The first is the result of "an over-sufficient and generally precocious ovarian

activity." As typical of it, the author instances a young lady, whose parents are of great nervous temperament, is herself prematurely developed in every respect, and first menstruates at thirteen. The flow from the beginning is profuse and painless. At fourteen, however, her health begins to suffer. She becomes anemic, suffers from loss of memory, faints at her lessons, etc. Steady pressure over the ovaries now gives her great pain, which, however, cannot be induced during menstruation, when she is always in better health. Such cases are far from uncommon, and their cure usually lies in marriage. If they remain single, they simply go from bad to worse up to the menopause. The cause of this condition will usually be found to be too close application to books or music at the very time when the system needs rest in order to engraft healthily on itself the great change which accompanies puberty. Mr. Tait enters a strong protest against this pernicious fault in educational methods, and though avowedly a believer in the woman's rights question, clearly points out the mischief which must result to woman, and through her to the race, from any system of co-education. "To hear an elderly maiden lady read a learned paper on mathematics may be a gratifying circumstance, but it is largely qualified by regrets when we speculate what superior children she might have produced if she had been a little less learned in books." In severe cases of ovarian hyperemia no treatment seems to answer except the surgical one of removing the ovaries and tubes: "The idea that removal of the ovaries will unsex a woman is founded on ignorance. So far as maternity is concerned it, of course, destroys the function completely; but that has already been done by the disease for which the operation has been performed." "The operation, if successful, will be found really to reinstate her in her sexual functions, not to unsex her."

The conditions of acute and chronic inflammations of the ovary are then considered, and strikingly illustrated by cases. The connection between ovarian inflammation and exanthematic diseases is clearly proven. It is a specific form of ovaritis, and results in a cirrhosis which may be characterized by general atrophy. It is sometimes associated with uterine atrophy leading to what was first described by Simpson as superinvolution of the uterus. Chronic ovaritis is stated by Dr. Duncan to be almost incurable. Tait, whilst admitting its incurability in hospital practice in the greatest number of cases, does not take such a gloomy view of the condition when occurring amongst the wealthier classes. As one of its results, there occurs hypertrophy of the glands which may affect the follicles or the fibrous tissue. Where it affects the former, the ovaries become cystic, and between these small cystic ovaries and uncontrollable hemorrhage, there appears to be a close connection. Three cases of the kind are reported, and would seem to show that the proper treatment—indeed the only effective one—is removal of the ovaries. Abscess of the ovary is a very rare condition; at least, it is one almost impossible to diagnose before death. From the cases seen by Tait, and from a study of those reported by others, the conclusion is forced on him that abdominal section should be performed as soon as the symptoms leading to a suspicion of the presence of pus become marked.

This whole chapter is after all a strong plea in favor of earlier abdominal section in cases of ovarian disease. The cases reported by Tait are well-nigh conclusive evidence that more frequent resort to the knife is justifiable. If he appears over-enthusiastic, the re-

markable results he has obtained certainly warrant enthusiasm. If sceptics—if that large class of old-fashioned routine practitioners—will but read this chapter, one good result of its having been written will be the infusion into them of a portion of Mr. Tait's enthusiasm, and then, perhaps, we will cease to hear the cry, which especially comes from some of our English friends, that "spaying is monstrous," because it unsexes a woman, and that Battey's operation is "detestable."

The great subject of ovarian tumors, the conditions which may simulate them, and the operation for their removal, is next considered. And first the pathology of these tumors as it appears correct to Tait, is given. For the sake of simplicity the term *ovariotomy* is applied to the removal of the ovary for any cause whatsoever; and the term *cystoma* is applied to any diseased ovary in which the presence of cysts is a leading characteristic. The fact that the formation of Graafian follicles begins very early in the life of the child and that the dropsy of these follicles at times produces ovarian tumors in young children, gives a clue to the origin of ovarian cysts in the adult. Tait's researches have led him to the conclusion that ovarian cystomata result from ovarian dropsy alone. "The function of the ovary is one of cyst formation from its earliest existence to its latest. . . . The aim and object of this cyst formation is the production, maturation, and discharge of the ovum. But if the ovum be not formed, or if it be produced to only a rudimental extent, may it not happen that the cyst will not rupture, but go on aimlessly expanding?" It is noted, too, that the changes in type which take place in the epithelium of a cyst cavity are often the forerunners of malignant disease, whence "the absolute necessity of removing ovarian tumors at a very much earlier stage of their existence than has been, until recently, the accepted rule in practice."

The variety of cystoma which has received the name of "Rokitansky's tumor," is of interest on account of its rarity, and from the fact that it contains ova. It is always bilateral, of slow growth, consisting of many small cysts. Tait has seen two such cases. His theory of origin is that "they are produced by the retention of the ova in the Graafian follicles and the distention of their cavities by a continuous secretion of the liquor folliculi." Dermoid cysts, according to Tait, are the result of altered nutrition in an ovum in fetal or infantile life.

Beyond the above brief extracts it is impossible, within the limits of a review, to follow Mr. Tait in his interesting account of cystomata, their pathology and varieties. Indeed, a fair idea of the worth of this portion of his book can only be derived from a personal perusal. Following the pathology of ovarian cystomata are described at length the conditions which may simulate them. It is necessary here simply to say that the account is most complete and instructive. The operation for the removal of ovarian tumors is now described. The description is prefaced by a full history of the operation, and priority of performance is claimed for Robert Houston, of Glasgow, who operated in 1701. Mr. Tait, however, claims too much. Houston's paper is entitled "An account of a dropsy of the left ovary of a woman aged fifty-eight, cured by a large incision made in the side of the abdomen, by Dr. Robert Houston," and in the "gist of the description," as given by Tait himself, nowhere is it stated that anything more was done than to empty the cyst of its contents. This is only a partial ovariectomy. It is quite conclusively settled that Ephraim McDowell performed the



first ovariectomy in the true sense of the term. This, however, has no connection whatever with what concerns us here—Tait's own method of operating by means of which he has been able to obtain such good results. There is, according to him, but one method of curing an ovarian cystoma, and that is by removal. Tapping "never cures a tumor, it only brings about complications." It is justified only as a palliative for tumors which cannot be removed. Tait's rule is to operate as soon as a tumor is discovered. Ether is his anesthetic. His position as to antiseptics is that their use is not necessary; that whatever improvement may have seemed to follow their introduction, is really due to the "introduction of the intra-peritoneal treatment of the pedicle." As for the clamp, its use simply set back the progress of ovariectomy by many years: "the only pedicle requiring it is thick and soft, and so short as to contain, perhaps, a small piece of the tumor." Such cases, however, rarely occur. Tait has devised a special clamp (Fig. 33, p. 285), which he has used in eleven cases, including six of uterine myomata, with success. The immense majority of pedicles he ties with what he calls the "Staffordshire knot," described at length on page 287. As regards drainage, Tait emphatically indorses Keith's practice, and uses the drainage tube whenever he cannot properly cleanse and dry the abdomen. Tait's main maxims are positive cleanliness and strict attention to minutiae, however trivial. At the end of this chapter a table of his latest cases appears. They consist of one hundred and one, all performed without any Listerian details, and with but three deaths.

As a fitting close to this book is a chapter on the recent extensions of abdominal and pelvic surgery. Tait's results are simply appended without comment, since they speak for themselves, as an evidence of what may be accomplished by a man who has the courage of his convictions. Of forty-five cases of removal of the uterine appendages for myoma, the mortality is two; of twenty-four cases of removal for hydrosalpinx and twenty for pyosalpinx, all recovered. The following table represents cases of various kinds operated on since 1878, with but one death—a case of extra-uterine pregnancy.

Nephrectomy, . . . . .	1
Nephrotomy, . . . . .	8
Cholecystotomy for gall-stone, . . . . .	4
Hepatotomy for hydatids, . . . . .	10
Laparotomy for pelvic abscess, . . . . .	20
"    " abscess of spleen . . . . .	1
"    " hydatids of peritoneum, . . . . .	4
"    " chronic peritonitis, . . . . .	8
"    " acute " . . . . .	2
"    " removal of extra-uterine pregnancy, . . . . .	7
Total, . . . . .	65

After such results, well may Tait say, "for my own part, so fearless am I now of abdominal surgery, so splendid have been my results in fields of practice which, until three years ago, seemed hopelessly inclosed, that I venture to lay down a surgical law, *that in every case of disease in the abdomen or pelvis in which the health is destroyed or life threatened, and in which the condition is not evidently due to malignant disease, an exploration of the cavity should be made.*"

E. H. GRANDIN.

## ABSTRACTS.

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1. Klotz (Innsbruck): *Gynecological Communications* (*Wien. Med. Wochen.*, 38-41, 1882).—This serial-story kind of writing seems to find especial favor at Vienna. The first chapter discusses "hysteria and castration," the former of which has been recognized and has been a source of annoyance to doctors as well as patients from the time of Hippocrates. It is settled that the disease is a neurosis. Ammann's theory harmonizes best with the practical experience of gynecologists upon this subject. As far as it is translatable, we conceive that his idea is that hysteria is the result of a peculiarly developed organization of the entire nervous system, *joined to certain particular causative elements*, the latter being most commonly diseases of the sexual organs. Less frequently the cause may be a disease of some other variety, whether physical or mental in its nature, and the most frequent of the former is anemia. The author believes, however, that only a small fractional part of the women and girls who are anemic are also hysterical. According to Ammann's statistics, eighty per cent of hysterical patients have diseases of the sexual organs, and every fourth woman who claims to be sick has hysteria. It must be borne in mind, however, that diseases of the ovaries are often so occult that the organs present nothing abnormal upon examination while they are in the body, and none macroscopically nor microscopically after their removal. But their removal is often followed by a disappearance of the hysteria and other troubles which had been ineffectually treated by other means. When other organs of the genital apparatus are diseased, curing them means a cure of the hysterical symptoms. In judging as to the propriety of performing Battey's operation, two considerations are important: 1. The degree of danger to life. 2. The percentage of recoveries with disappearance of the diseased condition, compared with the recoveries without such disappearance. Experience in this operation is yet too limited for accurate deductions. From the results accompanying the work of those with the largest experience, Tait and Hegar, for example, he estimates roughly that the mortality can be reckoned at fifteen to twenty per cent; about sixty per cent are radically cured, and the remaining twenty per cent recover without a disappearance of the disease for which the operation was performed. The question must then arise as to the source of the disease in one-fifth of the cases which submit to Battey's operation, since it is not in the ovaries. It may be in the tubes or other uterine adnexa, and the propriety of removing them, as has been done by Tait, the author, and others will therefore arise. The difficulty may be in the uterus, and we have this possibility discussed in the next division of the chapter which appears under the caption—"Concerning a variety of fixed and anteverted uterus, together with degeneration of the ovaries, in connection with local and consensual symptoms highly developed—hysteria major—and concerning a method of operation for this condition of disease." Anteversion is defined as a condition in which the long axis of the uterus is nearly parallel with the plane of the superior strait. In such a condition

the physiological angle of flexion has disappeared, and inflammation either exists or has existed. This condition (anteversion) may have been caused by imperfect involution following pregnancy, particularly at the placental site. In the case of nulliparæ it may have been caused by imperfect development, by atrophy of the anterior wall, and in exceptional cases by small myomata. In a second class of cases, the anteversion is complicated with fixation, the latter being caused by inflammatory shortening of the utero-sacral ligaments on account of a posterior parametritis. The fixation may also be at the fundus, when one or both round ligaments are shortened, in which case the cervix would remain mobile. Fritsch is quoted as being of the opinion that anterior fixation may be complicated by inflammatory adhesion of the tube and ovary of one side or the other to the inner surface of the pelvis. The history of a patient of the author is given, in which there was pronounced anteversion and fixation of the uterus, so that it seemed to *roof over* the pelvis; associated with this was degeneration of the ovaries. The anteversion was traceable, by inspection, to an inflammatory shortening of all the uterine ligaments. There were no peritoneal adhesions, but the primary metritis had been propagated, resulting in sub-peritoneal transudation into the smooth and striped muscular fibres of the peritoneal folds, with consequent thickening and shortening. General hysterical convulsions were also present, together with other characteristic symptoms of the disease. The operation which the author performed consisted in the removal of the ovaries, tubes, and broad ligaments, the separation of the uterus from the round ligaments by division, and the breaking up of the anteversion by forcibly manipulating the uterus back and forth. The woman recovered, ceased to menstruate, and was relieved of the bad symptoms which she had previously had. A second case was operated upon where the symptoms were similar to those in the first. In this case the ovaries had undergone granular atrophy, and the left tube had become cystic. The patient recovered entirely and was able to attend to her ordinary duties. An analysis of these two cases would give the following history. The first was exposed to cold during menstruation, the second suffered a fall from quite a height. Metritis resulted in both cases. Shortening and thickening of the ligaments followed, and this means pressure upon the bladder, anteversion, disturbed nutrition, and pressure upon various nerves. It would thus be easy to account for the various nervous symptoms, and it is very interesting to see that the parts recovered (measurably, at any rate), their normal condition when the offending substances were removed.

AND. F. CURRIER.

**2. Prof. Ludwig Kleinwaechter (Prague): The Connective Tissue and Myomatous Tumors of the Vagina** (Reprint from the *Zeitschr. f. Heilk.*, iii., 1882).—The author refers to the rarity of the cases strictly belonging under this head, points out the mistakes made by previous compilers, and, having had occasion during 1881 to remove a large fibroma of the vagina, and to examine the specimen of a vaginal myoma in the collection of the Patho-Anatomical Institute at Prague not hitherto published, presents a synopsis of fifty cases from the literature, and adds to it the following:

CASE 51.—Preparation from the Patho-Anatomical Institute at Prague. The tumor was removed post mortem from a seamstress, single, æt. 38,



on October 14th, 1877, in Breisky's Gynecological Clinic. In reference to it is the following entry: "Vagina rather roomy, long; close above the posterior commissure is a dense, firm, cavernous (fächerig) tumor, the size of a chestnut; it was covered by the epithelial investment, and had a somewhat reddish color. The mucosa is extended over it, and is colored dark-violet." Examination of the microscopic specimens shows it to be a pure myoma springing from the muscularis of the vagina.

CASE 52.—In the collection of the same institute are some microscopic preparations of a small fibrous polypus of the vagina, with short pedicle, consisting of connective tissue only, and springing from the submucous connective tissue. Other data are lacking.

CASE 53.—Operated by K., on March 12th, 1881, not hitherto published. The patient was a Tyrolese peasant woman, virgin, æt. 38. Had complained of pain in the genitals for more than a year. The tumor had appeared in front of the vulva one year ago. Menstruation, formerly regular, had ceased eight weeks ago. Micturition and defecation were not seriously interfered with.

The tumor depended from the vagina on a broad pedicle, 2 cm. in diameter, and 3.5 cm. in length. The tumor was about the size of a fist, its greatest circumference measured 25 cm., its greatest length 7-8 cm.; it was covered with mucous membrane, which was ulcerated in many places, but was otherwise smooth, rose-red, and had a firm, dense feel. The pedicle sprang from the anterior vaginal wall, about 3 cm. above the introitus. The urethral orifice was very red, swollen, and in a catarrhal condition. It was surrounded by many small pediculated, polypoid papillary proliferations.

*Operation.*—The pedicle was surrounded with a wire snare, so as to control eventual hemorrhage. The urethra was protected by the introduction of a catheter. The mucosa was incised vertically on the right and left of the pedicle, and the tumor partly enucleated. The pedicle was found to extend upward and forward toward the posterior wall of the symphysis. During the enucleation of the pedicle, the assistant perforated the urethra with the catheter. There was no hemorrhage when the pedicle was severed, and the accidental injury was closed with two catgut sutures. Then the wound was closed with catgut sutures, the prolapsed vaginal wall relapsed, and a cotton tampon inserted. The papillary proliferations were then abscised with scissors, which was more painful than the operation proper which was done without narcosis. Antiseptic precautions were used, but no spray.

On the following day, the wound was edematous, tense, and painful; after two superficial sutures were removed, some purulent ichorous fluid escaped. The wound was irrigated with salicylic-acid solution; nearly all the sutures came out, and the wound finally closed by suppuration. Result good.

Here follows a detailed description of the macroscopic and microscopic appearance of the tumor, on the strength of which K. states that it presents the character of a genuine fibroma, with the combination of edematous softening and ample cell-proliferation around the vessels, which here and there represents myxomatous tissue. From the ordinary firm fibromata this one should be chiefly distinguished as being soft, edematous; the point of development of which is to be relegated into the submucous connective tissue of the vagina.

After enumerating four more, doubtful cases, the author draws these conclusions: The connective tissue and myomatous new-formations of the vagina are not quite as rare as is generally believed. We know next to nothing about the etiology. Faye's assumption—onanism—is void of any foundation. The tumors occur at all ages, cases being reported in the new-born and nearly all intermediate ages up to fifty-one years, but they are most frequent in the period of sexual activity (88.8 per cent).

Respecting the patho-anatomical conditions, fibromata seem to be the most frequent, myomata the rarest, the mixed forms standing between them. While in the uterus sessile myomata and fibro-myomata are found, but never sessile fibromata, in the vagina pure connective tissue tumors occur; otherwise their structure corresponds with those of the uterus. Regarding the origin of these tumors, they spring either from the sub-mucous connective tissue or the muscularis of the vagina, or possibly from the stratum of connective tissue between vagina and rectum. As in similar new-formations of the uterus, we may distinguish fibroids and fibrous polypi. Concomitant circumstances will determine whether the one or the other form will develop. The pedicle is very variable in thickness. The size of the tumors has ranged between that of a pea or hazelnut and that of the head of a one-year-old child, with corresponding weight. The seat is variable, but the anterior vaginal wall is most frequently affected. These tumors occur singly, almost without exception. It is doubtful whether these tumors may change into cavernous tumors, but edema is not rare. Fatty metamorphosis has never been reported, but a partial myxomatous degeneration may take place. Induration and calcification do not seem to occur. There is no record of an authenticated case of a mixed form of these tumors. Complications with fibromata, myomata, and fibro-myomata in other parts of the genital system are rare. The symptoms depend on the size of the tumor, its seat, the manner of its attachment, and the complications. Symptoms seem to occur rather late, as the growth of the tumors is slow. Hemorrhages are rather rare. Perforation into neighboring cavities has not been observed. Occasionally the uterus may become dislocated. Menstruation seems but rarely influenced. Conception during the existence of these tumors is not rare, but nothing is known about the influence of pregnancy on the tumor. Judging from the data given, the tumor seems to be without any effect on the pregnancy, but labor may be mechanically interfered with by a large tumor, unless its mobility is assured by a long pedicle. Little is known of the influence of the puerperium on the neoplasm. The diagnosis generally is not difficult, but it is necessary that not only the tumor, but also its seat and manner of attachment be determined. In the differential diagnosis, prolapsus and inversion of the uterus must be excluded, perhaps also descended uterine polypi and tensely-filled cysts. Other tumors, such as sarcomata, may be mistaken for them, unless a piece of the tumor be excised.

The prognosis is favorable. The treatment can only be operative and may be simple manual twisting of the pedicle, the application of the ligature, abscision with knife or scissors, the galvano-caustic loop, and enucleation after division of the mucosa close to the base of the tumor. (In the four cases in which this method was employed, union by first intention was not obtained, despite the most careful application of the

suture.) The other conclusions may be passed over as self-evident, especially as this abstract already exceeds the ordinary length.

**3. Wilhelm Fischel (Prague): On the Therapeutics of Puerperal Sepsis** (*Archiv f. Gyn.*, xx., 1).—The author points out that in the treatment of puerperal sepsis hitherto the uterus has received too large a share of attention and that other wounds in the genital tract have been more or less overlooked. The literature of the antiseptic treatment is then passed in brief review, and the fact brought out that the use of intrauterine irrigations has increased rather than diminished the mortality. The author therefore undertakes the task of clearing up this apparent contradiction.

The material at the disposal of the author for the settlement of the question includes the obstetric cases in Breisky's second clinic at Prague, during the three years from June 1st, 1879, to July 1st, 1882. The percentage of mortality fluctuated between 3.1, 7.2, 1.7, and 0. This difference in the results cannot be explained by changes in the prophylactic precautions, which remained essentially uniform during the whole of the time; but it finds its solution in the numerous experiments made in 1880 with temporary and permanent intrauterine irrigations.

It will be necessary to briefly follow the author's deductions:—It is obvious that the treatment of septic puerperal affections must be chiefly local and surgical in character. The points of entry of the septic infection must be the points of attack for its removal. Infection may take place in three ways. 1. The septic virus can be introduced into the secretion of the internal genitals of the parturient or pregnant woman, infect it, increase in it, and secondarily penetrate into the depth both through the intact surface and through raw spots always present. 2. It can be directly inoculated into a wound, whether pre-existing or made during an operation. 3. The two factors may act simultaneously. The fundamental principles of treatment are thus given: in the first case, removal and disinfection of the pathological secretion; in the second, disinfection of the wounds; in the third, a combination of both methods.

Respecting the points of entry of the septic virus, the author thinks himself justified in including not only raw but also intact surfaces of the genital canal from the fundus uteri to the skin of the external parts. Evidently, the puerperal wound, the inner surface of the uterus, plays the chief part; but smaller and larger wounds at the cervix, in the vagina, and at the vulva enter into consideration nearly as frequently. In the case of primary infection of the secretion, there has been observed in rare instances an implication of portions of the intact surface of the vagina and the labia. In inoculated infection, the disease spreads into the depth from this single wound; the superficial extension and the infection of the secretion are usually somewhat slower. Inoculated infection and infection of the secretions have become rarer since all manipulations have been limited as much as possible. The spread of the infection of the secretion from the vagina to the uterus requires a certain amount of time. Systemic infection does not take place with lightning rapidity, but rather in this way, that the septic points form the depots, as it were, from which swarms of the organisms (or substances in solution?) penetrate at intervals into the tissues; each of them may produce violent morbid symptoms, but can usually be effectually combated by the living



tissue when further introduction is prevented. The treatment is based on this view. The first sign of septic infection is a rise of temperature. The methods of treatment are: 1. Rendering infected wounds harmless. 2. Removal and disinfection of infectious secretions. For the disinfection of septicly infected genital wounds have been used in the clinic: camphor, zinc chloride, and tincture of iodine. The camphor was used in the form of emulsion (1:10 of mucilage), pledgets of cotton saturated with it being applied to the wound and changed at intervals. If thought desirable for the vagina, the emulsion was injected through a glass syringe to which a piece of rubber tubing was attached. These applications proved useful in slight wound suppurations and gangrenous forms. Potassium permanganate in saturated solution applied by means of a wool brush to the wound often proved very effective; but the best results were obtained with tincture of iodine. Zinc chloride has more frequently failed than helped when used in ten to fifteen-per-cent solution. In most recent times, iodoform and naphthalin have also been tried, but have no advantage over the camphor emulsion.

For the removal and disinfection of septic lochial secretions, both temporary and permanent vaginal and uterine irrigations were used, in the shape of carbolic solutions of various strength, and solutions of chloric ine water. The effect common to all irrigations is: inciting uterine contractions, removal of stagnant secretions, and disinfection of the surfaces of the genitals as well as of the materials adhering to them. After a thorough discussion of temporary and permanent vaginal and uterine irrigations, the author concludes that they can be of use only for carrying off septic fluid contents after the removal of solid remnants and for the disinfection of septic virus adhering to the surface. If the constitution is able to overcome what is already absorbed, the patient is saved. For this reason, after a single thorough irrigation, its repetition can do no good, is erroneous in principle, and has been practically abandoned in the clinic, while permanent irrigation is thought admissible only in those rare cases where the removal of shreds of tissue from the uterus or a contused wound of the vagina or cervix was not entirely successful before. Thus temporary irrigations are to be preferred to the permanent, which, when used cold, are as effective in abstracting bodily heat as the cold pack. The chief danger of intrauterine irrigations during septic puerperal affections lies in the possibility of transferring decomposed vaginal secretions and shreds of tissue into the possibly still healthy uterus, with consequent infection of either the secretion or the tissue. Equally dangerous would be, in case the secretion is already infected, its introduction into a wound made during the irrigation. Permanent irrigation, which requires persistence in one position of a debilitated patient, has been the cause of bedsores which have proved fatal.

Nowadays, the dangers are sought to be obviated in the following way at the Prague clinic. Previous to every intrauterine irrigation the vulva and vagina are most carefully disinfected. The latter is washed out with an ample quantity of five-per-cent carbolic solution or strong chlorine water; every suspicious-looking wound of the perineum, vulva, and vagina is thoroughly cauterized with potassium permanganate or, better, tincture of iodine; then the uterine cavity is carefully explored with the finger and all the possibly present remnants are removed, and finally the irrigation is performed under the guidance of the finger. From two to six litres

of fluid are used, according to the gravity of the case. Mention is made also of the possibility of conveying infection by the hand of the examining physician at a clinic. Here, where several examinations have to be made in the course of one forenoon, disinfection of the hands will find its limits, for a continual scrubbing and washing will be followed by eczema which will almost certainly exclude a positive disinfection; hence avoiding the touch of septic material is the fundamental doctrine of their antiseptic prophylaxis. Our limits prevent our considering the illustrative cases in the lengthy paper (70 pp.), at the end of which are tabulated one hundred and twelve cases of febrile affections more or less intimately connected with septic infection of the genitals.

**4. Ruge: Erosions upon the Vaginal Portion of the Cervix, together with a Critical Review of the Literature of the Subject** *Zeitsch. f. Geb. u. Gyn.*, viii., 2).—Ruge's conclusions concerning the subject are based upon the joint investigations of Veit and himself, and most of them have already been published. This paper gives him an opportunity to answer Fischel, who claims that so-called erosions are congenital formations, and are found in the newly-born. Ectropium is also found among the newly-born. The conclusions are as follows: 1. From the observation of embryonal processes in the genital tract, it appears that the uterus, the cervix, and the vagina were originally uniformly covered with cylindrical epithelium; that by the development of the portio vaginalis, the vagina is separated from the uterus at a very early period; that this separation has taken place before the process of construction of glands in the cervix has begun. 2. From the observation of the so-called erosions, and the so-called ectropium in the newly-born, the conclusion is that the covering of the vagina, from below upward, with pavement epithelium, in many cases, does not reach the os externum by the end of pregnancy. There may remain remnants of the original cylindrical epithelium formations, in the vagina as well as in the portio vaginalis, in the midst of the area occupied by the pavement epithelium. It follows that the transformation of the cylindrical epithelium has nothing to do with the cervix. 3. From observations of the erosions in adults, especially in nulliparae, which are totally different, excepting in name, from the so-called erosions in the newly-born, it is evident that they are developed upon a vaginal foundation, and that they are entirely different from eversion of the cervical mucous membrane. From the methods by which they are cured (applications of pyroligneous acid, etc.), it may be seen that they will disappear. 4. From the observation of carcinoma of the uterus, especially that of the cervix and the portio vaginalis, it may be decided with certainty that the portio vaginalis and the cervix are to be differentiated from one another, for the new growths in these two portions of the uterus have quite different relations.

The review of the literature includes a further criticism of the views of Fischel upon the subject, as well as those of Fritsch, Klotz, Münzberger, and Nieberding. The conclusions have already been expressed.

A. F. C.

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### PRIMARY CANCER (ENCEPHALOID) OF THE KIDNEY DURING CHILDHOOD.

BY

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THE following case of cancer of the right kidney has been of some interest to me from its extreme rarity in childhood, and it may also be interesting, on that account, to others.

Ellen W., aged five years, is of English parentage. Both father and mother are vigorous and have always enjoyed good health. Upon careful inquiry, however, it appears that a paternal aunt of the patient, when about six years of age, caused considerable interest to be manifested in her by several prominent London physicians concerning the growth of a tumor in her right side, and that, although she had visited several hospitals in that great metropolis, the parents could not obtain a definite diagnostic opinion concerning its precise nature. The tumor, however, is said to have disappeared after lasting about two years, although it had in that period of time obtained such a size as to cause quite a deformity, which was apparent in a photograph submitted to me. Further than this, there is a record of an excellent family history on both mother's and father's side. My patient was the second child in a family of three, and has always been in good health, with the exception of a rather severe attack of enterocolitis in the hot summer of 1879, and, about a year ago, of an attack of remittent fever, which lasted about three weeks, *and was accompanied with diarrhea*. She never had scarlatina.

The first manifestation of her recent illness occurred last December (1882), in the appearance of "a lump on her right side," as her father expressed it. He stated that the child was not sick, but that he felt anxious about this *lump*, as she had fallen down stairs, three months previous, and had struck the very side in question against an upright post during her descent. She com-



plained at the time of the accident of nothing more than children usually do under such circumstances, and it was only recalled to mind by the appearance of the present tumor in the right side.

Physical examination revealed an ovoid tumor extending from the lower margin of the liver to within an inch of the crest of ilium. This tumor occupied such a position that, if a lateral-median section of the body were made, the line of section would pass half an inch behind the posterior margin of the tumor. It was very hard and movable both by the hand, and by the action of the diaphragm during respiration.



Gentle manipulation caused no pain whatever. At this time, the tumor could be grasped in its middle with fingers and thumb, and lifted and moved about quite freely without pain or inconvenience to the little patient. Percussion gave a continuous dull note from the upper margin of the liver to the lower point of tumor, and from this it was concluded that close adhesions existed between it and the lower margin of liver. The patient was apparently in good health; the excretory organs performed their respective functions in a normal way. The urine was carefully examined with negative results. Her appetite was good. She

slept well. Her skin was clear, and she had the appearance of a plump well-nourished child. She would play and romp about as usual with other children. Towards evening, she would complain slightly to her mother of cramps or "pains in her belly."

Jan. 11th. Saw patient again. Tumor increasing in size, chiefly towards the middle line of abdomen, and downwards toward ilium. Patient not quite so lively. She would complain suddenly of pain at play, making her peevish. Appetite still good, nutrition good, bowels regular, and urine normal.

Jan. 22d. Found a distinct systolic bruit, heard loudest over maximum elevation of tumor, gradually fading in intensity posteriorly toward the spine, and anteriorly toward the epigastrium. In both of these situations, it was plainly audible, but had a distant character, while over point of greatest elevation of growth it appeared as if quite near the surface. The heart was now slightly displaced upward and to the left. Pulse increased slightly in rapidity. Temperature normal. Urine still normal.

Jan. 26th. Dr. Raddich saw the patient with me to-day. The growth was much increased in size since last visit, and a decided feeling of fluctuation was now quite evident throughout the entire growth. At this time, there was a general enlargement of the whole abdomen becoming apparent. The arterial bruit so distinctly heard the week previous is no less distinct, and is now distant in character. The patient is beginning to show signs of emaciation. There is now noticed a prominence or bulging on the *left* side of the vertebral column at about the level of the first, second, and third lumbar vertebræ. This was thought to be due to involvement of other postperitoneal glands of that side.

Feb. 1st. Dr. R. P. Howard saw the case with me, and after a careful examination agreed with us in inclining towards the diagnosis of encephaloid cancer, as far as it was possible to judge at the present existing stage of the disease. The tumor now seemed to increase in almost every direction, and especially so toward the epigastrium, where a decided prominence with skin tension was apparent. The whole abdominal contents seemed as if in one great mass and moved together. There was no tympanitic note on percussion to be obtained, except along the anterior axillary line of left side; all to the right of this was of wooden dullness. There is very little pain or annoyance caused by examinations. She can stand up with assistance, but cannot walk any longer with comfort. She has to be carried about. Heart is considerably displaced upwards, and to the left side, pulse very rapid. Prominence of left side behind is increasing. Bowels move once a day, and urine normal. The bruit in tumor can no longer be heard at any point.

February 5th. Respiration, 24; pulse, 120; temperature normal. Measurements of abdomen were as follows:

At nipple.....	20½ inches.
Xiphoid cartilage.....	22 "
Eighth cartilage.....	23½ "
Maximum elevation.....	24 "

Umbilicus.....	23 inches.
Extreme lateral length of tumor.....	5 $\frac{3}{4}$ "
Tumor extends to left of umbilicus....	2 "

Apex of heart-beat at fourth interspace, one-half an inch outside left nipple. Superficial veins very prominent on surface of abdomen.

February 22d. Measured at

Nipple.....	21 $\frac{1}{2}$ inches.
Xiphoid cartilage.....	23 "
Eighth rib.....	24 "
Maximum elevation.....	26 $\frac{1}{4}$ "
Umbilicus.....	26 "

Apex heart-beat one inch outside left nipple and one-quarter inch below level of it. Respiration audible behind no lower than one-quarter of an inch below inferior angle of scapula.

Patient becoming very restless at night, and complains of soreness in front when lifted. Pulse rapid; temperature normal. Bowels very much constipated, moving only once every four or five days. No jaundice.

March 5th. Patient unable to leave cot. She is much emaciated. Pulse 154. Diarrhea set in last night. Urinates very frequently, passing but a small quantity at a time. Apex heart-beat now one and a half inches outside left nipple, and on a level with it. She has not vomited since beginning of December. There is no edema of extremities or other parts of body, and has never had any during illness. Has never exhibited uremic symptoms.

March 12th. Fearfully emaciated. Can only rest on back, with both arms extended backwards over her head, her hands grasping the iron bars at head of the bed. In this position, she seems to obtain the largest possible abdominal and thoracic area by producing traction upon the chest-walls from without. Under these circumstances, the heart and lungs have more freedom of action, and the patient consequently feels more comfort than in any other position. No further change took place until the 16th, when death occurred from asthenia.

*Autopsy.*—Dr. Osler's Report: The body was greatly emaciated; abdomen distended; superficial veins not much dilated. When opened, a large tumor was seen filling the greater part of the abdominal cavity, and closely attached to the right side. The omentum was adherent, the cecum attached to the lower end, and the ascending colon passed along the left border. The pylorus lay upon the upper end, and the duodenum was flattened upon the left side of the mass. The tumor was retroperitoneal, and peeled out easily, bringing with it aorta and inferior cava, which were deeply imbedded in the hinder part. The mass had a rounded outline, broad above, with a concave left border, which presented several very soft lobulated portions overhanging the groove in which the cecum and colon lay. The right border was more solid, and at the lower part showed a small remnant of the kidney surface. The growth has perforated the capsule, and pro-



jected in large, soft masses, some of which were hemorrhagic. The last inch of the abdominal aorta was surrounded by the tumor, the left iliac was pervious, the right was filled with thrombi, and the wall eaten away. The inferior cava could be traced in the mass for about an inch and a half, and just above the bifurcation was obliterated, the walls in close contact. Section of the mass showed it to be made of a soft cerebri-form tissue interspersed with extravasated blood. At the right border there was a trace of kidney substance in the form of a thin shell. The ureter was occluded. The pelvic and renal vessels were infiltrated with the neoplasm.

On microscopic examination, the soft, grayish-white substance was found to be composed of small round cells with but little stroma. Towards the right border of the mass where it was firmer, the soft cerebri-form substance was inclosed in denser strands.

### *Remarks.*

In considering some of the more interesting details in connection with the above case, I think it would be well to discuss them, as points of interest, in a short review of the literature of the subject as recorded up to the present time.

Nothing of any value was written upon cancer of the kidney, with the exception of G. König's "Treatise upon Diseases of the Kidney" in 1826, and that of Wilson, of London, in 1817, until after the year 1830. Cruveilhier was probably the first writer of note, closely followed by Rayer, who put the disease on a sound foundation. After this came the classic works of Walshe, and then of Lebert, who distinguished so clearly between primary and secondary forms of cancer of the kidney. Ebstein and Roberts are also well-known authors on this subject. Rowe, of Cincinnati, records a very interesting case in the *AMERICAN JOURNAL OF OBSTETRICS*, April, 1881.

Of the different species of cancer found in the human body, encephaloid (fungus hematodes) is the one almost invariably found in the kidney. Its chief physical characters as a neoplasm consists in its soft, pulpy, vascular condition; it is frequently the site of extensive hemorrhages, cavities are formed in the mass, containing large quantities of blood mixed with cancerous detritus which flows freely from the cavities when opened or broken into during the post-mortem examination. The whole organ may become infiltrated uniformly, and when it does so, the enlargement is regular. But we also have the formation of nodules of disease growing from a particular part

or end of the kidney, and encroaching upon the ground of a neighboring organ, which gives on palpation the idea of an irregular shaped tumor, and adds very materially to the difficulty of diagnosis. This disease always begins in the cortical substance, and gradually involves the pyramids. The whole growth is surrounded by and contained within a strong fibrous membrane. In about sixty (60) per cent of all reported cases, there have been found secondary deposits elsewhere. The seats of these deposits have been the lymphatic glands in the hilus of the kidneys, the vertebral, and mesenteric glands. The liver and lungs were also affected, but not so often.

In considering the etiology of the disease it is a remarkable fact that among traumatisms an injury, such as a blow or fall, is often the starting-point in the history. Chamel, in 1829, refers to a case originating from a blow, in which the anterior wall of the abdomen was destroyed by the disease. Bright gives the history of a young woman who, several months previous to her death from cancer, had experienced a fall down-stairs, and dated her disease from that time. Another case, of a boy, who dated his suffering from a kick in the left side; he afterwards died from medullary cancer of the left kidney. A very interesting case is recorded of a lady who died of carcinoma of the kidney eighteen years after a severe fall on the stairs. Immediately after the accident, she had a severe attack of hematuria, and in the course of six months a tumor became evident as a swelling under the margin of the right ribs. In my own case was experienced a severe fall down-stairs, three months before the first appearance of the growth, but there was no hematuria or other evidence of internal injury. Traumatism may play a certain rôle as an exciting cause in these cases; yet, why should it not be constant, and do so in all cases; instead of which we have such injury followed in one case by nephritis, in another by perinephritis, and another by malignant disease. These are pure clinical facts, inexplicable unless we fall back on the doctrines of individual predisposition.

The earlier writers looked upon cancer of the kidney during childhood as a curiosity from its rarity, but more extended research has taught us that it is found chiefly in the extremes of life—early childhood and old age—while the periods of life

between these points enjoy a remarkable immunity from it. It is said that males are more prone than females—of twenty-four children fifteen were boys and nine girls, and the disparity is still greater with adults. This disproportion may be accounted for by the marked preference shown by cancer for the organs of generation in the female.

In cancer of the kidney, there are two distinct symptoms almost always met with—an *abdominal tumor and hematuria*. Roberts asserts that in all fatal cases one or both of these symptoms are invariably present. Of sixty-four cases sixty-one had a large abdominal tumor, and the remaining three had hematuria; and it is noteworthy that in *all children* who have died from this disease there was an *enormous* abdominal tumor present. These tumors, as a rule, represent the largest, as a variety, which are met with in children. They begin in the loins between the ribs and the crest of the ilium, they increase upwards and downwards, and to the front towards the navel. Percussion within this area elicits a dull note, provided there is not part of the intestine between the tumor and the abdominal wall. But, as a rule, this is the case; and in the case of the right kidney being affected, the ascending colon and cecum are generally found on the outer side of the tumor, and as the growth enlarges, the ascending colon is pushed forward, and is found running obliquely across the growth from right to left. Here, of course, we would get a clear tympanitic note.

In my case, the bowel ran along on the left side of the growth in its entire length, and at no place crossed it. Therefore, there was an important diagnostic sign wanting, though, towards the end, such a displacement of the bowel was, however, considered possible, and would account for the uninterrupted dull note obtained. In the case of the left kidney when it is affected, the same condition obtains. Here the descending colon, and often part of the small intestines, cross or lie right in front of the tumor, separating it from the abdominal wall. It is quite true, however, that the intestines can cross the tumor and still elicit a dull note on percussion, from the fact of it being so compressed that it becomes a mere flattened band, and in some cases has been felt as such through the abdominal walls. These tumors are generally firmly fixed by adhesion, and are not influenced by the movement of the diaphragm.



In my case, however, the tumor was remarkably movable, both by palpation and the action of the diaphragm during respiration, without causing the patient pain or inconvenience. This point is important, from the fact that there is a case reported in the London *Lancet* (March 18th, 1865), in which the diseased kidney was so movable or wandering that it was taken for an ovarian tumor. The usual elasticity of these growths on palpation, amounting sometimes to a sense of fluctuation, carries with it a deception for which we cannot be too much "upon our guard" in making a diagnosis. It is probably conveyed to the hand by the general softening process taking place in the growth as it enlarges, and by the formation of secondary cysts or cavities, chiefly on the surface of the principal growth, filled with a semi-fluid cellular substance which is capable of conveying a wave-like impression on palpation.

(To be continued.)

#### A CLINICAL REVIEW OF THE METHODS IN GENERAL USE FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.

BY

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(Continued from p. 776.)

In the brace depicted in Figs. 17 and 18 is shown the triple arrangement of the clamps, and this splint is very effective indeed in disease of the upper lumbar or lower dorsal vertebræ. When it is desired, however, to use extension and fixation ratchets upon the four sides of the body, the brace of Dr. J. A. Wyeth may be employed. In January, 1879, Dr. Wyeth read a paper before the New York County Medical Society, from which the extracted following cuts and description are taken, the case presented having been brought to a successful issue:

"Each bar consists of a shoulder at each end, and a solid section cut with cogs and grooves which telescopes into a hollow section, with a key for lengthening or shortening, and a 'spring-

catch' to hold it fixed at any point. It is the same mechanism that is used in Prof. Sayre's knee-joint splint."

"The shoulders are caught in the staples riveted to the immovable plates, and the requisite extension is secured by means of the key."

"Without suspending my patient, the arms being held out of the way by an assistant, outside of the tightly-fitting under-shirt, I apply *two* jackets of the required thickness. The lower edge of the upper jacket is just above the diseased points, and



FIG. 19.



FIG. 20.

Wyeth's adjustable jacket.

extends upwards to the arms. The upper edge of the inferior jacket is just below the seat of disease, and extends down over the hips. As the plaster bandages are 'setting,' I place three zinc plates about two by four inches (perforated by numerous holes from opposite surfaces so as to prevent them slipping) in each section of the jacket. To the centre of the plate is securely riveted a flattened staple of iron. One of these is fastened over the spinal column above and below, one under each arm, and one directly underneath these over the hips. These are held securely in position by several turns of

the plaster bandages, passed over them alternately above and below the *staples* which are left exposed. (See Fig. 20.)”

“As soon as the jackets are firmly ‘set,’ the *extension* bars (represented in Fig. 20) can be applied.”

“In Fig. 20 the *double plaster jacket*, with three extension bars in position, is seen, and in Fig. 19 is a view of the same, with padded bands instead of plaster.”

“The amount of extension is under the perfect control of the surgeon, and can be graduated to suit the comfort of the patient and the necessities of the disease. As the jackets yield, as they will under all circumstances to a greater or lesser extent, the extension is increased to meet the exigency, and the same jackets will last throughout the treatment. At night, or at any time when the patient is reclining, when there is not a demand for much support, the middle bar is removed, allowing the patient to rest comfortably on the back.”

“It will be seen that by my method the upper portion of the body rests upon the tripod of bars which are anchored, one over the sacrum and one over each hip, and that the diseased spinal column is relieved from all pressure from above or laterally. If there exists a lateral curvature, one of the lateral bars can be extended more than the other, and the curvature corrected. If the curvature is antero-posterior with the concavity backward (lordosis), the posterior bar will demand extra extension, and if the convexity of the curve is backward, the two lateral bars will require extension at the expense of the posterior.”

Around the portion of the body between the two jackets a dry, unplastered roller is carried moderately tight in order to retain any dressing on the sore (if this exist), and to equalize the pressure.”

Having asked Dr. Wyeth his present views on this subject, the following reply was received:

NEW YORK POLYCLINIC, }  
NEW YORK, February 20th, 1883. }

DEAR DOCTOR:—In regard to the subject of *continuous extension in the treatment of some forms of disease of the spinal column*, allow me to say that further experience has modified my opinion as to its efficacy since the publication of my paper on this subject read before the New York County Medical So-



ciety in January, 1879. I would submit this synopsis of the opinion I now hold of this method of treatment:

1. Continuous extension, by any apparatus which is not uncomfortable to the patient, is the safest and surest method of relieving diseased vertebræ from superincumbent body weight, and of maintaining the necessary fixation of the spine.

2. In disease involving the last dorsal, the lumbar, or the lumbo-sacral junction, the plaster jacket in two segments, the upper pressing merely around the thorax, and the lower resting upon the iliac crests and around the pelvis, with four adjustable extension bars at equal distances from each other, meets all the indications more satisfactorily than any other apparatus.

3. For disease affecting the dorsal vertebræ other than the twelfth, this method is not successful.

4. For disease affecting the cervical vertebræ, continuous extension offers the best hope of success. Respectfully,

JOHN A. WYETH, M.D.

More recently Dr. M. Josiah Roberts<sup>1</sup> has replaced the Wyeth adjustable rods with elastic, and claims for the divided jacket so constructed special advantages. He states: "In the treatment of the spine below the cervical, we have to descend at once to the crista ilii for a point against which to make counter-pressure. If the disease be not located inferiorly to the middle dorsal region, it is always advisable to still make upward pressure against the occipito-mental surface as in the treatment of cervical caries. Hence, the cervico-cephalic encasement is retained." With regard to its application he says: "I carefully suspended the patient, in the usual manner, with a skin fitting knit shirt and 'dinner pad' applied, until the patient was made comfortable. While thus suspended, it was incidentally determined that, having overcome the reflex muscular spasm, a very considerable amount of articular motion could be effected without causing the least pain or discomfort." Having applied the first layers of plaster dressing, a head rest of the form shown in Fig. 21 was placed in position and secured by an additional layer of plaster bandage.

"Four pairs of light steel perforated steps, Fig. 22, with their sheet copper arms attached, were next placed in position,

<sup>1</sup> Medical News, Oct. 14th, 1883.

one above the other on the surface of the plastic dressing and secured in place by a layer of bandage. These steps are for the purpose of retaining the elastic extension bars, presently to be described, in position. After time had been allowed for the 'setting' of the plaster, the 'dinner pad' was removed and a transverse circumferential division of the jacket made at its smallest part. Four light steel rods, turned up at one end as shown in Fig. 23 and provided with a nut and strong spiral



FIG. 21.



FIG. 22.

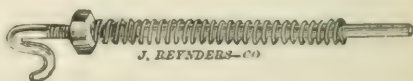


FIG. 23.

spring, for making *elastic extension*, were placed and secured, at their upper and lower ends, by passing through the perforations in the projecting portion of the steps that are firmly embedded in the layers of plaster. With a wrench the nut may be moved up or down, and any desired amount of elastic extending force exerted. The improved position gained by suspension was thus maintained by continuous elastic tension. By moving up the nut from time to time, the kyphotic curve may be still further reduced without producing the slightest irritation while the jacket is in situ."

"The testimony of several patients who have previously worn the rigid jacket, as recommended by Prof. Sayre, has thus far been to the effect that the divided one, with elastic extension bars inserted, affords more efficient support and is less irksome. That it is so is evident, for the same reason that a spring carriage is a more comfortable vehicle to ride in than a lumber wagon."

"We have then for the treatment of the middle and upper

dorsal regions, as in the cervical, an apparatus which exerts continuous elastic extension, overcomes reflex muscular spasm, and admits of limited articular motion at the seat of disease."

"When the carious inflammation attacks segments of the lower dorsal or lumbar spine, the head-rest can usually be dispensed with and the bulge of the thorax be alone depended upon as the surface against which to make upward pressure."

The division of the jacket, and the attachment of the extension rods in such position as to render the idea effective have been in existence several years, and Dr. Roberts has substituted elastic extension rods for the adjustable extension rods, but

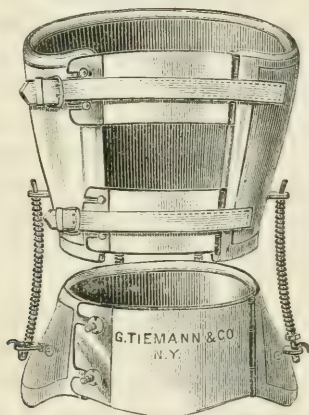


FIG. 24.—Roberts' elastic jacket.

otherwise has not modified the *principles* involved in the construction of the brace.

With regard to the idea of permitting motion, Heather Bigg,<sup>1</sup> in speaking of the requirements of a spinal apparatus or orthopragm, very comprehensively states that the affected parts of the spine must be kept motionless to relieve them from the grating and grinding of the burden they naturally are competent to bear, but which now, broken down by disease, they can no longer sustain. "It must also be as broadly as possible diffuse in its hold on the spine, for although only a small portion, one or two segments, of the spine may be diseased, it is insufficient even were it possible to hold these segments alone. For the movements of the spine are undulatory, its changes are

<sup>1</sup> R. Heather Bigg, *Orthopragms of the Spine*, 1882, page 85.



made as waves, just as a child flicks waves along its skipping rope. If then the injured part only was held, and the waves of motion were allowed to progress up to it, they would be abruptly checked with a jolt and their power distributed as a vibratory jar over such a part, and an effect produced as identically injurious to it as tapping it constantly with a hammer. Mass motion would simply be changed into vibratory molecular motion. Now neither of these is in harmony with real repose, hence not only must the injured part be held, but also the other parts of the spine."

"Next, this entirety of hold will give rest, not only to the bony portion of the spine, but will ease its muscles of their duties and so relieve the diseased segments of a multiplicity of pulls that are naturally upon them. The orthopragm must also bear the weight of the burden that the injured parts are wont to carry in health, but which no longer they can completely do and must transfer it to the pelvis, thus affording relief from depression as well as quietude. Lastly all these desiderata must be carried out without in any way interfering with vital functions, such as respiration, or even with that accessory to health, exercise."

"The spine must rest, but the patient must walk and take the air if needed." Dr. Roberts, on the other hand, claims that motion of the spine, if associated with local elastic extension, is of benefit, so that it appears to be a matter of difficulty to reconcile these diverse views, but as our object in this paper is to place the main points of treatment before the profession rather than to discuss from a personal standpoint the theoretical questions involved, we will pass to the consideration of another principle of treatment which seems to be based on sound physiological and anatomical grounds, and possesses the advantage of easy mechanical adaptation. I allude to *Backward Traction*.

(To be continued.)

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## OBITUARY.

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DR. BEVERLEY LIVINGSTON.

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It is with feelings of profound sorrow that we record the death of DR. BEVERLEY LIVINGSTON, of this city. He was born in New York, December 24th, 1852; graduated at the Sheffield Scientific School of Yale College, and received his medical degree from the College of Physicians and Surgeons in 1877. He was an interne at Bellevue Hospital for two years, whence he went to Europe, dividing his time between Paris and the German Schools, and devoted himself chiefly to diseases of children and microscopy. Returning in 1881, he immediately began practice under very favorable auspices, and in two years had secured undoubted success.

He was attending physician to the Nursery and Child's Hospital and the Northern Dispensary, and was a member of the Academy of Medicine and Pathological Society.

Those of his professional brethren who met him at a social gathering on Wednesday, June 21st, were little prepared to hear of his death on Saturday, the 30th. He had been aware of a slight sore throat for several days, but wholly disregarded it. After dining, on the evening of the 21st, he sat writing by an open window until a late hour, and the next morning his throat was very painful. Dr. Metcalfe found him delirious, with a temperature of  $104^{\circ}$ , and pronounced his disease diphtheria. He, however, progressed favorably until Friday, the 29th, when his old trouble, mitral disease of the heart, began to cause great distress, and on the following day proved fatal.

He was perfectly conscious to within half an hour of the end, and gave minute directions as to the disposal of his effects. His instruments he bequeathed to the Nursery and Child's Hospital, his books and collection of algæ and microscopic preparations to Yale College.

Dr. Livingston was of commanding physique, and possessed a manner singularly frank and engaging. His sunny temperament was conspicuously stamped upon his face, and his

presence, altogether, was of that manly sort which bespoke at once a charming purity and integrity of character.

His profession was his life. Having enjoyed unusual facilities by way of preparation, he applied himself from the start with great zeal and devotion, and, though so recently graduated, was the author of several essays which attest his worth.

The readers of this JOURNAL will readily recall his interesting papers: "On Congenital Diaphragmatic Hernia," "Diffuse Congenital Keratoma (Ichthyosis)," "Bismuth in the Treatment of Ulcerative Stomatitis and Noma."

Thus ended a career which, though scarcely begun, had in it so much of hope and promise.

GEO. B. FOWLER.

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## ABSTRACT.

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1. Zinn (Hamburg): **Melituria after Scarlatina** (*Jahrbch. f. Kindhkte.*, xix. B., 2 H.).—Diabetes in children, though more frequent than some suppose, is still rare enough to make every case of interest. On January 27th, a fine, healthy four-year-old boy sickened with severe scarlatina, accompanied with extensive diphtheria of the fauces and posterior nares. On the 13th day otitis made itself known, and on February 11th began an acute nephritis, which ran a very severe and stormy course, but yielded, and the patient seemed to be doing well. In spite, however, of a good appetite, the child did not gain strength, and during the whole of March could not leave the bed. At the first of April it was found that there was a paretic condition of the right leg, but this gradually passed away. Ten weeks after the beginning of the sickness, the slight trace of albumen still existing in the urine, and the *increased* heart's action led to a more careful examination of the secretion, and it was found to contain a large quantity of sugar. Under proper diet and the use of salicylate of soda the sugar gradually diminished, the quantity of urine became normal, and the child regained his strength and spirits. Repeated examinations since the middle of June have discovered no sugar. The diabetes may be said to be entirely cured. The case is interesting both in its etiology and in its result. There is in the literature of the subject no case known to the author of melituria following scarlatina. Of 111 cases of diabetes in children from various causes, Gerhardt reports only seven ending in recovery. The case should at least make us careful in all cases of retarded recovery from scarlet fever to examine the urine for sugar.

J. F., JR.



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ORIGINAL COMMUNICATIONS.

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ANTEFLEXION OF THE UTERUS.

ITS ETIOLOGY AND ASSOCIATED PATHOLOGICAL CONDITIONS.

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BY

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1. *An Outline of the Anatomy of the Position and Surroundings of a healthy Uterus.*

A normal uterus is a decidedly firm fibro-muscular body, about three inches in length and about two inches at its widest part; is pear shaped, tapering down to a little below its middle where it is smaller than at any other point. From this point down it is about one inch wide. It is somewhat flattened antero-posteriorly, with the posterior surface more convex than the anterior. Running lengthwise through it, is a small flattened tube somewhat constricted at its centre and widening above.

The average depth of this channel is a little over two and a half inches. The uterus is to a considerable degree flexible and elastic, and when pressure is made on the fundus or upper portion it bends chiefly at a point a little below its middle, just opposite the constricted part of the lining membrane known as the os internum, or isthmus. On account of the solid and elastic nature of the organ, it does not bend sharply, making

the central, normally flattened tube form an acute angle, nor can it be fairly compared to the bending of a rubber tube with a relatively large calibre, which when bent, the concave side forms an acute angle and totally occludes the canal at the point of curvature. It bends with the curve such as would be made by rubber tube with very thick walls and small calibre.

Even when bent extremely, the canal describes a parabolic curve. Where the walls are very much thinner and the cavity distended, the anterior wall may make a flexion, somewhat as a tube of large calibre and thin walls, but such cases are rare. When uninfluenced by congestion or erection the normal uterus is held suspended nearly in the centre of the pelvic cavity, the axis of which crosses the long axis of the uterus just below its middle. The centre of the lower end of the uterus, the cervix, being somewhat posterior and the centre of the superior end, the fundus, being a little anterior to the curve known as the axis of the pelvis. The top of the fundus is somewhat below the brim of the pelvis, and the cervix is below and behind the centre of the pelvic cavity.

It is held in position chiefly by the fasciæ and connective tissues of the pelvis, and by the reflections of the peritoneum, which together with the fasciæ and connective tissues, form more or less distinct ligaments: Utero-sacral, utero-vesical and broad or lateral ligaments. In all of these there is more or less muscular tissue and they are curved and so elastic as to permit of a considerable mobility of the uterus as a whole, especially upward and downward and backwards and forwards. All of these ligaments have their attachments to the uterus below its middle, except the lateral or broad ligaments which, covering it anteriorly and posteriorly, project from its sides and attach it to the pelvis in such a way as to give it a forward inclination, and the round ligaments which tend to prevent its extreme backward displacement, and when contracted draw the uterus forward.

The vast quantity and disposition of the connective tissue, usually termed cellular tissue, not only helps greatly to strengthen the pelvic floor and retain the uterus in position, but it also on account of its network structure allows free elastic motion to all the pelvic contents, and, together with the immense number and size of the blood-vessels, render the contents

of the pelvis so mobile and elastic in character as to give it a power of adaptibility not very different from that of blood or water.

The elastic contractility of the muscles and connective tissues, that is the heart and muscles of the arteries, muscles of the ligaments and perineum and abdomen, the connective tissue of the skin, abdominal and perineal walls of the ligaments, fasciæ and so-called cellular tissue of the pelvis unitedly have an influence which I will term the vital musco-connective-tissue force.

The connective tissue and certain muscles, by their cohesive and contractile strength, prevents undue relaxation and displacement, while their structure and disposition admits of motion. And the adjustable pressure of the abdominal and arterial vessels, together with the heart's action, keeps up an ever-varying but more or less equable pressure.

2. *The Dynamics of the Pelvic Cavity, or the Influence of Forces in causing Anteflexion.*

The influence of atmospheric pressure, although universal in exerting pressure on all things on the earth's surface, has little to do with keeping the pelvic organs in place by opposing gravity. For this force to act as a retentive power by counter-acting gravity the vessel must be rigid and fixed above as well as on the sides and impermeable to air. So far as the retention of the pelvic and abdominal organs are concerned it helps to retain, by opposing gravity, only those organs, as the liver and stomach, which, when the diaphragm is arched upward, lie beneath the ribs, and it only acts in this way on these, when the ribs and diaphragm are made rigid by muscular contraction, as in holding the breath. This is why we hold our breath when falling or in jumping. It does not act on the pelvic organs in the same way, for the abdominal walls can be made rigid only by the downward action of the diaphragm, and thus the vessel has a piston acting downward and tending to drive out, instead of, by keeping off downward pressure, tending to retain the organs in place.

Gravity acts upon the contents of the pelvis as it does upon the semisolid elastic and mobile contents of a rigid cylinder with a flexible bottom and with the top opening into another flexible cylinder also filled with an elastic ever-changing mass, falling and lifting at all times with more or less force.



If the perfectly normal uterus in a healthy nulliparous woman has a natural anterior inclination and has also a slight natural anterior curvature and is so suspended in the pelvis that it is free to bend forward at or above its middle without resistance so far as the ligaments are concerned, except, perhaps, it may be restrained to a very slight extent by the upper borders of the broad ligaments ;

What is it that prevents a normal uterus from bending forward at or above its middle when the person stands erect or when it is pressed upon by the action of the diaphragm and abdominal muscles, etc., etc. ?

1. The firm and elastic nature of the tissues of the uterus permits of motion, but tends to keep it in its normal shape.

2. The forward inclination and slight anterior curvature of the normal uterus puts it in the best possible position to enable it to withstand both continued and sudden waves of force from the action of the diaphragm and the abdominal muscles. When standing or sitting erect, the pelvis of a normally formed woman is carried backward so that a plumb line dropped from the front of the soft tissues covering the first or second lumbar vertebra will pass through or in front of the os pubis. When standing erect, as the central part of the spine curves forward, the sacrum and coccyx are carried backward and the floor of the pelvis is made more taut and firm than when the abdominal muscles are relaxed and the spine is straightened as it is in the squatting or reclining postures. Postures that make tense the abdominal muscles also make tense the floor of the pelvis, and those that relax the floor of the pelvis also relax the abdominal walls.

If we represent the abdominal and pelvic cavities by cylinders, the axis of one is not continuous with the other; but they form an obtuse angle of  $60^{\circ}$  or more to each other; thus, as the wave of motion caused by the diaphragm passes directly downward, it passes through the mass of intestines, and as they are attached and fixed posteriorly, they deflect the wave somewhat forward and downward on the elastic anterior abdominal walls, and from there it is deflected backward and downward into the pelvis and is thereby very much modified when it reaches the uterus. Now, if the long axis of the uterus is perpendicular to the plane of the pelvic

brim, or better, if it is somewhat anterior to the pelvic axis, the deflected and modified wave would strike the very top of the fundus, and glide over and around it and spend its remaining force chiefly on the floor of the pelvis. Of course, blows upon, or force produced by sudden contraction of the abdominal wall would pass backward and be received in the same way. Old men who have difficulty in urinating, bend the body forward, not only to relax the perineum and pelvic floor, but also to carry backward the abdominal wall, keep it rigid by voluntary contraction and thus transmit directly the force of the diaphragm on the bladder, and for the same reason, when one strains at stool, he leans very much forward so as to direct this force directly backward on the rectum.

Postures, therefore, which tend to make the pelvic cavity a direct continuation of the abdominal cavity may be injurious by bringing the uterus directly under the diaphragm, but it must not be forgotten that as long as the uterus retains its position and normal relations to the pelvic brim, it is in the best possible position to receive waves of force coming into the pelvis; for as the pelvis is turned up, the uterus is also lifted, and when the brim of the pelvis is directly under the diaphragm, the long axis of the uterus is directed against the downward motion; besides, when sitting at ease, as the free borders of the ribs approach the pelvis, the abdominal walls are relaxed, and thus much of the force of the diaphragm is dissipated, being expended mainly on the relaxed abdominal wall anterior to the pubis. As the spine is straightened the pelvic floor is relaxed, and the mobility of all the organs is very much increased, and offer but very little resistance to being carried backward against the rectum. And this is why we can best examine the pelvic organs with the patient on her back, with legs flexed and backbone straightened out, on a flat table, but we must not be deceived by taking it for granted that the uterus is equally movable in all other postures.

Again, any work which requires more or less rigidity of the body, and thereby necessitating tension of the abdominal muscles in the sitting posture, may be very injurious—such as working a sewing machine with the body inclined forward, etc. A tightly-laced woman usually sits erect, for in that position she is most comfortable. It is surprising how few anatomists

can give a correct answer to the question as to where a plumb line dropped from the anterior surface of the second lumbar vertebra will intersect the pelvis. Writers who ignore this special relation of the pelvis to the abdominal cavity naturally overestimate the mechanical influence and power of pressure from above on the uterus.

3. *Flexion is prevented by the Vital Musculo-Connective-Tissue Force*, or the sustaining power of the surrounding flexible and elastic and adjustable tissues which during life are filled with blood, fluids, gases, etc. These are all kept closely packed by the blood pressure and the elastic contractility of the skin, muscles, fasciæ, and connective tissues that make up the floor of the pelvis and the abdominal walls. This force is always more or less active, and when the abdominal muscles are tense, it is one of great power, and it not only helps to keep the organs in place, but regulates the pressure on the numerous blood-vessels and intestines of the abdomen, and, when opening the abdomen, some of the shock so frequently observed as a part of this pressure is removed, may be due to the great disturbance to the circulation caused by removing this pressure from the walls of all these vessels. When standing erect, the central part of the spine bends forward, and the ends bend backward, and the abdominal and perineal muscles are made tense so as to give power to counteract the downward force of gravity by bringing into full play this sustaining force. So important is this influence that it cannot be left out when considering the dynamics of the pelvic cavity.

In studying the influence of indirect pressure, such as is made by the diaphragm, abdominal muscles, blows, falls, etc., in fact all pressure, except when made directly by solid bodies in contact with the uterus, we must regard the pelvis as a cylinder with an elastic top and bottom, filled with fluid or a mass of tissues filled with blood, fluids, and gases, and so elastic and mobile as to transmit force, and be governed by very much the same laws as though it were fluid, a great part of which is composed of innumerable elastic intercommunicating tubes (blood-vessels). Therefore, when the floor of the pelvis is tense, force applied from above on the elastic abdomen, or by the diaphragm, is transmitted more or less equally to all parts of the pelvis, in front, behind and around the uterus, with as



much or about as much power as on the top of the uterus. And while the uterus is surrounded by these elastic and adjustable tissues in the living body, it is in a measure sustained in the same way as a flexible sea-weed is when surrounded by water. In other words, the weight of the fundus tending to fall forward and bend the uterus on itself is very much less than it would be out of the pelvis. The acting force of gravity to flex the uterus would be the weight of the uterus minus the average weight of the contents of the pelvis.

Advocates of the mechanical pathology of uterine displacements have overlooked this greatly modifying influence on all indirect forces acting on the pelvic organs, and have therefore exaggerated the effects of falls, sudden efforts in producing anteflexion, and are naturally led to rely too much upon mechanical support toward effecting a cure. Of course, the effect of downward pressure, when very sudden, as in the act of coughing, although much modified by first impinging on the elastic abdominal walls, would for a moment flex the uterus to some extent before the wave of motion would have time to reach the floor of the pelvis, or be evenly distributed; but the natural elasticity of the uterus and the surrounding tissues would cause it to rebound and in a moment assume its normal degree of curvature, and this would be the case even though the pressure from above was, as in lifting, straining at stool or lacing, made continuous. Destroy this elasticity and mobility, by either relaxing the supports so that the uterus rests against the unyielding pelvis, or by shortening or solidifying the ligaments or surrounding tissues, and then, in addition to disturbed circulation, the slightest force may have a baneful influence.

Constant pressure, such as is caused by lacing, undoubtedly tends to force the floor of the pelvis down, and in delicate women where the muscles and fasciæ are soft, flabby, and wanting in vitality or tone, the uterus may be carried down so low, together with the floor of the pelvis, as to flatten and bend forward the cervix on the body. Lacing interferes with normal action of the abdominal muscles and the vital musculo-connective-tissue force generally.

The effect of downward pressure on the healthy uterus, therefore, tends to produce general prolapse rather than anteflexion.

When a uterus is soft, what causes it to become flexed when the person is erect, or when there is downward pressure produced by the action of the diaphragm and abdominal muscles?

1st. The normal position of the uterus is one of anterior curvature, and on this account the weight of the fundus, less the average weight of the contents of the pelvis, would tend to increase the normal anterior curvature, if the tissues are soft.

2d. Pressure from above tends to general prolapse of the whole of the pelvis, but since the pouch of Douglas and the bladder are the least resisting, or perhaps I should say are the most elastic parts of the pelvic floor, these two points would be the first to yield. Descent of Douglas' pouch would make taut the utero-sacral ligaments that are attached to the uterus just at and above the vaginal junction posteriorly; and therefore, until they give way, they would hold upward and backward this particular part of the uterus, while the distention of Douglas' pouch would push down the abnormally soft cervix in the direction of the vaginal axis. At the same time, the utero-vesical ligaments having their attachments to the pelvis below and in front, would be made taut only at its higher points of attachment to the uterus, and as this is somewhat above the point of attachment of the opposing utero-sacral ligaments, the upper part or fundus of the uterus would be pulled downward on the bladder. Therefore, if these forces were to act on a soft uterus, we would have anteflexion, but when acting on a firm and resisting uterus, we would have either anteversion or retroversion, according to the degree that Douglas' pouch is displaced, compared with the extent that the bladder gives way.

3d. Although I do not accept all of Hart's views as to the floor of the pelvis being divided into two segments, still, if he will allow me to prolong or attach his anterior and superior segment to the posterior wall of the pelvis, by the utero-sacral ligaments, and to extend or attach his inferior and posterior segment to the os pubis, by the fasciæ and the pubo-coccygeal muscle, I will accept his statement that for the uterus to escape out of the pelvis through the valvular overlapping opening, the border of the anterior segment must be pushed forward and the posterior segment displaced downward and backward.

Now, as the vaginal portion of the cervix is below the anterior segment and is just above the posterior segment, it is easy to understand why the uterus becomes anteflexed when soft, or retroverted when firm, as it is either pulled or pushed out of the pelvis. The soft cervix is pressed forward and mashed between the upper and lower segments, while the fundus is crowded forward, or falls backward, as the upper segment sinks lower in the pelvis.

4th. The loss to a greater or less extent of the vital-musculo-connective force, that is, feeble circulation, weak and flabby muscles, overstretched, relaxed, contracted, or otherwise abnormal fascias and connective tissue, etc., so frequently associated with and due to the same general causes, necessarily tend to lessen this force. Of course, besides softening of the uterus, other pathological changes, such as local atrophy of the walls, would greatly change and modify the influence of mechanical forces acting on the uterus; but of this we will speak later.

Downward pressure from the abdominal muscles may tend first to produce some exaggeration of the normal anterior inclination and curvature; yet, as a rule, in the otherwise normal uterus, prolapse beyond a certain extent will produce retroversion, for after a limited amount of descent the cervix is forced forward by direct contact with the curved tissues behind it, and, unless it bends, which it is not likely to do if normal, the fundus must go backward. Backward displacements are of much greater importance, pathologically, than anterior displacements;

First, because the degree of rotation of the uterine axis from its normal position is so much greater; and

Second, the broadside of the organ receives, with more direct and greater force, all downward pressure, for in retroversion the long axis of the uterus is parallel with the plane of the pelvic brim.

Third, the circulation is not only greatly interfered with by the greater degree of rotation, but the converging ends of the utero-sacral ligament strangulate the veins where they pass from the uterus on its sides.

Fourth, the uterus is abnormally fixed in the pelvis, and its mobility is in a great measure lost, and with it the normal ac-



tion of the vital musculo-connective-tissue force is also in a measure lost.

*Influence of the Bladder on the Position of the Uterus.*

In making examinations for uterine disease, the bladder rarely gives perceptibly any trouble, and except when nearly full or rather considerably distended, one could not be sure that there was any water in the bladder by bimanual examination. It is a soft and very elastic organ, and, except at its base, is free to move in all directions, so far as its attachments are concerned. Except when considerably distended, it has little or no influence in changing either the shape or position of the uterus. When tensely distended, it acts as a more or less fixed, solid and firm body, and carries the uterus backward, and may tend also to straighten out any anterior curvature. When partly filled, or when not made tense by distention, it yields to pressure in any direction, and merely goes to make up a part of the flexible and adjustable mass that surrounds and supports the fundus uteri. Of course, there is never a vacuum in the pelvis during life, for the elastic abdominal walls, by contraction or distention, make up for either a loss or gain, and therefore, when the bladder is emptied, the space is readily filled up by the surrounding tissue.

*The influence of the Rectum on the Uterus.*

The rectum, when empty or only slightly distended, is also a movable and elastic body that helps to make up the adjustable mass of tissues of the pelvis. When greatly distended, it pushes the cervix uteri to one side, and if it is not habitually distended has but little influence on a normal uterus. But when habitually distended, especially its lower part, it greatly interferes with the normal circulation in the pelvis, and by distention and pressure, stretches the pelvic fasciæ and uterine ligaments to such an extent, that more or less prolapse of the uterus occurs; and when the uterus is soft, it tends to produce flexion of the cervix. Besides producing distention and relaxation of the pelvic floor, an impacted rectum is nearly always associated with voluntary straining at stool, which, together with the relaxed and feeble connective tissue, the soft and flabby muscles, and the weak and stagnant circulation so common in such cases, will invariably induce either anteflexion, or more frequently retroversion and retroflexion.

*The point of greatest Curvature in Anteflexion.*

The exact location of the greatest point of curvature in an anteflexed uterus is often very difficult to determine. As a rule, it is just about the os internum; first, because at this point the uterus is slightly smaller than at any other point; second, it is at this point where the cervix and corpus unite, two bodies somewhat different in structure; third, at about this point the large blood-vessels enter and pass from the uterus, and thus tend somewhat to weaken the walls; fourth, because just at and above the os internum the uterus is free, while the cervix, just below this point, is made comparatively fixed by a firm supporting ring formed in front by the attachment of the utero-vesical, and posteriorly by the attachment of the utero-sacral ligaments. Flexion may take place either above or below the os internum. When the vaginal part of the cervix is abnormally long, or large and soft, it in time becomes bent forward, and the flexion may be found at the vaginal junction. Where there is flexion of the body, or a caving in of one cornu, it is the result of local atrophy or extreme dilatation and thinning of the uterine walls, perhaps flexed or distorted by peritoneal adhesions.

*Time of making Examinations.*

The time of making examinations to decide the exact degree of flexion should be carefully considered, for, without doubt, the amount of curvature will vary at different times; for instance, just before and just after menstruation. The best time would be during one or two weeks between the menses, when the uterus is usually quiet. If the uterus is an erectile organ, then erotic excitement, by engorging the blood-vessels, might tend to straighten the uterus. If some authorities are right about the function of the round ligaments, the uterus would be displaced forward during erection.

Special conditions of the nervous system would probably have some effect on the shape of the uterus; as for instance, when influenced by fear or intense mental excitement; it may be shrivelled up, as the penis of a youth is when he is being examined the first time for venereal disease.

*Variability of the Generative Organs.*

All gynecologists must observe how greatly the features of the organs of external generations vary in different races and in

different individuals. The depth of the perineum, the distance of the clitoris from the meatus urinarius etc., are all variable, and the length and shape of the labia are as diverse as the nose. And I am certain that this normal variability characterizes the internal organs as well, and on this account we cannot lay down the law as to exactly what will be the exact curve of the uterus. Because a woman is round shouldered and has soft muscles is not sufficient ground for pronouncing her abnormally shaped, and to be best treated by braces; and when the uterus is not found of the exact shape of an absolutely perfectly formed uterus it is not sufficient grounds for pronouncing it a case of pathological curvature to be cured by artificial support.

*Frequency and Degree of Anteflexion.*

It is a fact that, of the nulliparous women which a gynecologist examines, the uterus may be called abnormally flexed in a very large percentage; but in deciding what the normal curvature is, it must not be forgotten that almost all of these women come to be examined because they have uterine disease, and the condition of their uteri cannot fairly be used in estimating the normal standard.

All nulliparous women have some degree of anterior curvature of the uterus, and this may vary from ten to thirty degrees without denoting an abnormal condition. That is, while the uterus is quiescent and uninfluenced by congestion, etc., the angle made by the junction of the two lines drawn one in the direction of the axis of the cervical canal, and the other of the canal of the body, might vary from an angle of one hundred and sixty-five to one hundred and thirty-five without being an abnormal curvature; when it passes or is most of the time found less than one hundred and thirty-five degrees, it may fairly be called abnormal.

*Etiology.*

Congenital influences which prevent perfect development of the organs of generation greatly predispose to anteflexion of the uterus, and undoubtedly have much to do with the premature atrophy and degeneration so frequently associated with it.

In the working of the law of "the survival of the fittest," the organs of generation play an important rôle. It is a merciful law which prematurely atrophies the generative organs



of the degenerate, and thus puts an end to their reproduction in offspring. The prevalence of congenitally anteflexed uteri, or, to speak more accurately, imperfectly developed anteflexed uteri in a community, may be one of the first indications of race degeneration. The functions of the generative organs are not a necessity in the physical organization of the individual. They do not bear the same relations to the existence of the individual as the heart, liver, stomach, kidneys, etc. Life can go on in the individual without them. They are the last to develop. Therefore they are most likely to suffer from imperfect development and degeneration when the supply of vitality is below par. Their full and proper development would seem to depend upon a surplus of vitality.

In civilized communities, especially among the well-to-do classes, the law of the survival of the fittest is greatly interfered with by the protection afforded to many of those with faulty constitutions. This causes many feeble organizations to reach puberty that otherwise would have died in childhood.

Women, more than men, are debilitated by the enervating influence of modern life—want of healthy exercise and fresh air, etc., etc. Besides, they are equally influenced by the general tendency to develop the intellectual faculties at the expense of the physical health, and in this way the somewhat extraneous organs of generation are the first to suffer. Again, in civilized communities, the functions of these organs are kept under restraint; that is, women marry late in life, and when this is the case for several generations, this enforced restraint (disuse) of an organ may have a decided influence toward causing degeneration or atrophy. The average highly civilized woman does not have enough children to keep up by use the full development of the uterus, and thereby a normal relation with the other organs of the individual.

Much is done to avoid having children, and many have none or only one or two. In the majority of cases, the functions of these organs are perverted and abused, or they are kept greatly under restraint. Exercise, use, work, call it what you like, performance of function, is essential to the perfectly normal life of all organisms and their organs, and the violation of this great law by disuse results in degeneration.

Menstruation may have been intended by the Creator to take the place of the free exercise of the functions of these organs, and thus compensate for restraint and disuse so much and so necessarily practised by civilized races. It seems to regenerate a part at least of the uterus. This may also account for the almost constant muscular contractions that have lately been described as taking place in the uterus.

In a woman with a deformed pelvis, or in other respects showing imperfect development, we usually find an abnormally small uterus, which is, as a rule, anteflexed; but not infrequently we find a well-formed and fully-developed uterus in a small and delicate woman. Sometimes we find a strong and vigorous woman with a small, imperfectly-developed anteflexed uterus, and most of these come to be examined because they are sterile, and not on account of dysmenorrhea, etc. Imperfect development, and certainly premature degeneration, is the penalty of violating natural laws. Yet some of the above may be explained by saying that this may be the way that nature takes to limit somewhat the too rapid reproduction of the race as it becomes more capable of self-protection; for the greater the intellectual standard of a community the fewer the number of children are born. My observations that have been made in the past twelve years lead me to believe that the more refined the intellectual development the weaker the normal venereal desire is, among women at any rate. It is very commonly absent, and when existing is frequently abnormal. Among the working class it is more common and usually normal, and is kept under control by physical labor. Excessive physical labor subdues, but does not crush it out like excessive intellectual development. This may be explained by the fact that physical work does not, like mental work, tend so much to injure the nervous system, and to the fact that the latter is so often associated with an enervating sedentary life.

Before puberty, the uterus is soft and relatively long, and in early childhood the cervix is considerably larger than the body of the uterus. In children, after death, the uterus is so frequently found anteflexed that some good authorities believe it to be the normal position of that organ before puberty, and that if development is normal at the age of maturity, it will have grown larger, and become straightened. If the living uterus of childhood is in the same position as it is commonly

found after death, then all that is necessary in most instances to account for the occurrence of small anteflexed uteri is to find the cause of the failure to develop or that which arrests complete normal development when once begun. This may be due to hereditary influences directly affecting the generative organs, or it may be due to the want of harmonious development, the effect of bad general health or bad educational influences, or to bad hygienic conditions. Perhaps most cases are due to several of these influences combined.

The condition of the general health has much influence on the development and position of the uterus. Bad general condition of the blood, anemia, stunted growth due to poor or imperfect food, want of fresh air, healthy work and exercise, excessive or unhealthy development of the nervous system, fevers, etc., especially any cause which draws excessively upon or weakens the blood or nerves during the period of development from ten to eighteen years of age, greatly predispose to anteflexion. Many of the cases classed as congenital are undoubtedly merely flexions made permanent before maturity is reached. Of children born of healthy parents, few reach full development in perfect health; and just as the greater number have more or less chronic catarrhal disease of the pharynx, so also have they more or less leucorrhea, due either to a partial degeneration or catarrhal state of the mucous membrane of the uterus.

Many have what we call slight granular erosion of the os uteri; in others, this degenerate state of the mucous lining extends to the os internum and uterine cavity, and the uterus gradually becomes flabby—if it has ever developed—and flexed, and the nerves of the membrane at points become hyperæsthetic, etc.

In those who inherit or acquire a rheumatic diathesis, or a tendency to catarrhal disease (scrofula), exposure to malaria poison or to cold may induce endometritis, and finally lead to anterior displacement. Anything that weakens or softens the uterine walls, may cause anteflexion; and anything that increases the size of the uterus tends to produce, or at least to increase, anteversion.

Child-bearing is usually enumerated as a predisposing cause of anteflexion, but I prefer to say that too frequent child-bear-



ing or an abnormal labor or puerperal state or labor in an unhealthy woman may result in anteflexion. Child-bearing is as truly a natural act as eating, yet one would hardly be justified in saying that eating predisposed to indigestion. During pregnancy, as the uterus enlarges, it is anteverted, but when so in an otherwise healthy woman, it cannot be considered abnormal.

The enlarged state of the uterus soon after labor, together with the relaxed condition of the ligaments, causes anteversion, and if the patient is imprudent in getting up too soon, the anteversion may be made permanent, or, on account of the softened state of the uterine walls, anteflexion may result.

Subinvolution of the uterus or ligaments may end in anterior displacements. An enlarged, hard, and anteverted uterus is characteristic of old subinvolution, and it is not uncommon to find a small fundus bent sharply forward on a large subinvolted cervix, or the large soft cervix bent forward in the vagina. Uneven or unequal involution may thus cause an anterior displacement in the same way as unequal development. Specific vaginitis extending to the endometrium by enlarging the uterus causes anteversion and may finally result in anteflexion. Inflammation extending to the parametrium, especially pelvic peritonitis, may, by the contraction of ligaments or adhesion, result in anterior displacement, but, as a rule, they cause lateral or posterior displacements. Unequal development of the walls or segments of the uterus may cause anteflexion.

Imperfect development of the vagina, absence of Douglas' cul-de-sac, or the presence of cicatricial bands about the vagina that push or pull upon the cervix uteri, may cause anteflexion. Abnormal utero-sacral or other ligament may also cause anterior displacement.

Abnormal development of the cervix, as when too long to find free play in Douglas' pouch, it will be forced forward in the direction of the outlet of the vagina, and thus will necessarily flex the cervix on the body, or displace the fundus uteri backward. Fibroid or other tumors may displace the uterus forward by their weight or pressure, or may increase the length and size of the posterior wall, and thus cause forward flexion.

Habitual constipation, straining at stool, etc., during the period of development, during menstruation, or at any time

when the uterus is soft and weakened by disease, under the same conditions, lacing, excessive or violent exercise, or being too long in the standing position, may cause anterior displacements; but it must not be forgotten that, since pressure transmitted through the abdomen, containing only its usual contents, is not all spent upon the fundus uteri, but more or less equally to its sides, to the bladder, rectum, and the whole floor of the pelvis, and that some of this force thus tends to support the uterus in its upright position, and the resultant of the force is more toward a general downward movement of the floor of the pelvis, and everything attached to it, rather than upon one organ. On this account, I doubt very much that a blow or fall or any other external force than one continuously acting on an abnormal uterus, would be likely to result in causing serious anteflexion. Such force as would be caused by lifts, strains, etc., may cause prolapse, retroversion, and retroflexion, or tear a ligament, and thus cause serious local disease, but, except when acting together with some predisposing cause or abnormal condition, I have never seen an anterior displacement caused by them.

I have no doubt that the anterior change of position and flexion caused by one physical bimanual examination is often greater than that caused by a blow or fall. It is true that such examination may do harm when predisposing conditions exist. Constant pressure such as is caused by lacing tends to depress the floor of the pelvis and carry the uterus downward and backward, and when it is soft may flex it forward.

The influence of the upright position on flexion has not been fairly stated by authors; for the direct influence of the weight of the fundus in flexing the uterus has been greatly overestimated. I am satisfied that most of the local pain is due to congestion produced by the upright position, congestion in and around the uterus, and to the general prolapse of all the pelvic organs, and is rarely solely due to the weight of the fundus acting on the seat of flexion. Stand a uterus up on its end outside of the body, and gravity acts with the full weight of the fundus, but in the pelvis of a living woman it acts only with the weight of the fundus minus the average weight of all this cavity contains, or rather its elastic media, elastic tissue, blood, gas, etc. In cases where the nerves of the lining membrane

are hyperæsthetic, this slight weight probably has some influence in causing additional pain, especially when the point of curvature is such to allow an up-and-down motion from a slight cause. It is true that often a well-fitted anteflexion pessary will afford great relief, and usually when it does it is not by straightening the uterus and thus preventing occlusion of the canal, but by steadying the uterus and preventing this up-and-down motion of the fundus, and by counteracting to some extent the bad influence of the prolapse which is so often associated with anteflexion.

A sedentary life which prevents general muscular development, or causes them to become soft and flabby, may cause uterine disease by inducing stagnation of the pelvic circulation and by affording conditions which stimulate perverted and abnormal erotic excitement. Many cases where the vaginal os is normal and the supra-vaginal cervix is flabby and elastic and apparently elongated, with a small ball of a fundus bobbing about, seemed to be produced by the effect of too frequent erotic excitement on the circulation. Such cases will usually admit that they have frequent and often abnormal sexual desire, and in most of these cases there is a congested fulness about the left broad ligament which reminds one of the varicocele on the left side in frail young men.

#### *Pathology.*

For several years past I have given up the belief that anteflexion frequently directly caused dysmenorrhea by mechanically closing the canal, and thus obstructing the menstrual flow. Where there is obstructive dysmenorrhea, except in rare instances, I believe it to be due, as a rule, to stenosis of the os uteri at some point or to clonic spasm at the os internum, and in the majority of instances of dysmenorrhea in anteflexion, I think it is caused by the hyperæsthetic condition at or near the os internum combined with more or less stenosis at this point—stenosis due to degeneration, contraction, and atrophy, and not to occlusion caused by the sagging or bending of the uterus. Of course, excepting those cases in which the dysmenorrhea is caused by Fallopian salpingitis or ovarian diseases, or other diseases that may be associated with anteflexion.



When there is dysmenorrhea with anteflexion, the passing of a probe or sound through the os internum causes severe aching pain, and frequently the patient will voluntarily exclaim that it causes the same pain and sometimes the same reflex disturbances as menstruation. In many of these cases, the withdrawal of the sound is followed with blood. It may be asked, why is the os internum and the spot just above it so hyperesthetic, while the cervical canal below this point is not in this same condition. I would say that, aside from the narrowing of the canal and probable spasmodic contraction at this point, the membranes are different in kind, and for some of the same reasons that pharyngitis is much more common than stomatitis, degeneration may affect the mucous lining at the os internum, and not in the same way that of the cervix below.

One can never actually see the state of things at the os internum in such cases during life, but to me the mucous membrane and nerves seem to be in a condition somewhat, if not exactly, similar to the mucous lining in a case of phymosis when inflamed or congested; it is exquisitely sensitive and irritable, inducing perversion of sexual function and serious reflex disturbances, and, like phymosis, tending to contraction of the orifices and loss of elasticity and capacity of expansion. Other cases of this disease where there is flexion and hyperesthesia of the mucous lining of the canal are comparable to a stricture of the urethra, especially in the prostatic and membranous portion, and in my hands the treatment of the two are in principle exactly the same, and, at least so far as the dysmenorrhea goes, is successful; often simply stenosis of the os externum may be associated with flexion, and may be the real cause of the dysmenorrhea; but, if so, the contraction must be extreme.

The condition of the mucous lining at the point of curvature may be swollen and congested and menorrhagic, or it may be pale and degenerated with thick, hard, and fibrous, rather than muscular walls, and these may be rigid and contracted. The latter is usually the case in the congenital type, or those in which the flexion was acquired before maturity. In other cases, the muscular tissue is scant, and the walls are composed of soft and flexible connective tissue, or they may be indurated and give evidence of old inflammation of the connective tissue,

and these are usually those in which the flexion was acquired after maturity. The os internum is usually contracted, and is inelastic, the contraction being due to organic rather than mechanical causes. There may be dilatation of the uterine cavity above the flexion, and in such cases the os internum is found stenosed.

Anteflexions may be divided into two classes :

1st. Those which are usually termed congenital. In these cases, the curvature exists before puberty, or is acquired before maturity is completed, and is mainly the result of interrupted or imperfect development.

2d. Those in which the curvature takes place after full development. In these cases, the flexion is due to softening or loss of tone in the uterine walls, the result of general loss of health and local disease or to local disease alone.

In the first class, due to or complicated by imperfect development, both the fundus and cervix are frequently bent forward. In other words, the organs is doubled upon itself, causing the axis of the cervical and corporeal cavities to form a parabolic curve, and the flexion is more or less fixed, often so much so that the whole organ may be found rotated backward, and be really both anteflexed and retroverted at the same time. As a rule, the point of greatest curvature is at some point between the vaginal junction and the os internum. The vaginal portion of the cervix is bent so as to conform to the long axis of the vagina with the os directed toward the pubic bone. It is usually hard, abnormally small, flattened, and somewhat pointed, with the anterior lip crowded forward, giving the cervix a snouty appearance. The anterior flexion puts on the stretch the posterior wall, and pulls back and upward the posterior lip, and doubles up the anterior wall, which presses forward the anterior lip. The vaginal tissues of the anterior lip are, as it were, folded up so that the vaginal junction appears to be very near the end of the anterior lip, while the vaginal tissues covering the posterior lip are smooth, and tensely stretched over the cervix up to the vaginal junction, which is usually more than an inch from the end of the posterior lip. The fundus is also usually undersized, and is bent forward and fixed, forming a sharp angle with the cervix. The crowded tissues that unite the uterus with the bladder and the vaginal junction fill up to some extent the angle of flexion,

and feels like a mass of adhesive tissue that unites the fundus and cervix, and at the same time appears to limit the degree of flexion.

In some of these cases, the cervix seems to be the only part displaced, and, as a rule, when only one part is bent forward it is the cervix. Frequently there is some erosion of the mucous membrane in and around the os externum, or it may be small and contracted, but in most cases, while the cervix is small, the cervical canal is open and free from active disease up to the os internum.

The os internum is in many cases abnormally small, and often exquisitely sensitive. Hyperesthesia of the os internum occurs in the degeneration and atrophy incident to old age, and in cases of degeneration occurring in the young, the same contraction may also take place. The introduction of a sound into the atrophied uterus of an old woman who is nervous and suffering from local trouble, or even where giving no well-defined local symptoms, will often give the same pain as is so often caused by sounding the infantile anteflexed uterus in a young woman.

The uterine cavity just above the os internum is also frequently very sensitive, and bleeds readily to the touch. Sometimes the whole lining membrane of the body is painful to the touch, and just such sensations are induced as are felt during menstruation.

As a rule, the canal is short of two and one-half inches, but in some it may exceed this. Often the vaginal cervix feels abnormally long, but usually in such cases the body is flat and abnormally short. It may be that the flexion is above the os internum in these cases, but this is not easy to determine; for often this apparent elongation of the cervix is due to the fact that all of the cervix is readily felt, being crowded down into the vagina by the flexion. Not infrequently the point of flexion is held abnormally high up and backward in the pelvis, and in these cases the whole organ is more or less immovable, and the flexion firmly fixed. This may be due in some cases to adhesion and contraction of the sacro-iliac ligaments, the result of inflammation, but it seems to me in almost all cases to be caused by failure of development beginning early and extending to the ligaments; for in the early stages of development the uterus is relatively high. In other words, the descent



of the uterus is arrested at the same time that the complete development of the uterus is interrupted.

In many cases, the uterus is low in the pelvis and abnormally near the pubes; and in some cases the vagina is small, short, and Douglas' cul-de-sac more or less shallow. It is easy to understand in these cases why the cervix bends forward, for when the fundus is flexed forward, the cervix is forced backward, and if it meets resistance caused by a short vagina, it is gradually bent forward in the long axis of the vagina. Obstinate and chronic constipation and tight lacing probably plays an important part in producing those cases where there is much prolapse.

Frequently there is an abnormal fulness in the left broad ligament which may be due to old peri-uterine inflammation, but which I am satisfied is more frequently caused by faulty circulation in this region; the blood-vessels are in a condition resembling varicocele in the male, which is almost always greatest on the left side. Not infrequently this last condition is associated with a prolapsed ovary, as I have repeatedly seen verified by laparotomy performed for dysmenorrhea. In some of these cases it may be that the catarrhal disease extends from the uterus to the Fallopian tube; I am certain that this is frequently the case in those due to gonorrhea. I have lately kept a number of cases under observation, without treatment, for the purpose of studying the course of this disease. In my service at Bellevue, both the subjective symptoms and physical examinations plainly indicated that from the vagina the endometrium becomes affected, and later the perimetrium is attacked.

In those cases where the uterus is flexed after having been fully developed, the flexion is often movable or readily reducible, unless after flexion there has been peri-uterine inflammation leaving adhesion that binds the fundus down, of course, excluding the few cases of anteflexion that may be the direct result of the contraction of such adhesions. Sometimes the fixed cases of flexion due to arrest or imperfect development may be loosened up by some such change as abortion, or perhaps by retained menstrual blood repeatedly distending the cavity. But almost all cases of readily reducible anteflexions would seem to be the result of chronic endometritis or repeated congestion caused by frequent erotic excitement or some such in

fluence extending to the connective tissue, if not to the muscular fibres, and gradually softening, or inducing atrophy of the walls at or near the internal os.

In these cases, the cervix may not be much changed from the normal position and shape, while that part of the cervix above the vaginal junction, or the part that is bent, is relatively small, flexible, and sometimes apparently elongated to such an extent that the round and small fundus can be moved about *ad libitum* often in any direction. Such cases may be sometimes found retroflexed, and during or about the menses may be found erect and moderately firm. When the cervix is bent forward in this class of cases, it is usually enlarged and hard, with more or less discoloration due to imperfect circulation, and the flexion is more decided and fixed than in the simple cases when the cervix is not displaced.

Rarely cases are found where the fundus seems flexed above the os internum, but, as a rule, such cases are those in which there has been peri-uterine inflammation, with resulting adhesions pulling the fundus sharply forward, and I believe flexion of the body takes place when the fundus is enlarged and soft, being rendered so by dilatation of the cavity, or is left soft by receding inflammation or congestion.

I have seen two or three cases where the cervix was flexed forward and the fundus was flexed backward, but such cases are rare.

(To be concluded.)

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## TWO MORE CASES OF RETENTION OF A SILVER CATHETER IN THE FEMALE URETHRA.

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BY  
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DR. STANTON ALLEN has reported, in the June number, one case of this unusual accident, believing it to be unique, because he has failed to discover any literature upon the subject.

The accident has occurred twice in my practice, and, doubtless, many others have been annoyed by the imperfect oval eye of the silver catheter, which, if it have the slightest roughness

or irregularity, is liable to catch upon the mucous membrane of the inner extremity of the female urethra.

My first case was in a lady in the third week of typhoid fever, and wishing to avoid any anxiety about its removal, I left the instrument in situ for an hour, hoping that it might escape.

Upon my return, by forcibly depressing the point of the catheter, and pushing it inward, it was disengaged, and a small portion of mucous membrane was found adherent to the sharp edge of the distal end of the eye.

This instrument was one of J. Reynders & Co.'s make, and since that time, seven years ago, I have used a gum catheter.

A few weeks since, after a perineorrhaphy, I discovered that I had no catheter with me but the silver one of my pocket case, and I ventured to try it once more, but with the same dire result. This time I carefully introduced a uterine sound alongside of the instrument, and easily pushed it from its attachment, finding adherent membrane as before. I threw that catheter into the stove to comfort my patient, who suffered two days from its use, and to avoid any future temptation to employ it.

I have now provided myself with a silver catheter having pepper-box perforations, which seems to be free from all imperfections, and is to be especially recommended when catheterization is intrusted to a nurse.

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## THE SIGNIFICANCE OF HEMORRHAGE DURING THE EARLY MONTHS OF PREGNANCY.

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BY

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CASES are far from infrequent where, during the early months of pregnancy, hemorrhages, in greater or less amount, take place from the vagina. The flow may occur at what would answer to a menstrual period were the woman not pregnant, or in the intervals. What causes may underlie this hemorrhage, and what treatment is applicable and justifiable? Such is the question to be answered in this paper, the scope of which is limited to the early months of pregnancy, for the reason that



afterwards the placenta, through its diseases and faulty position, is the main causative element, and any consideration of it here would extend an article beyond useful limits. Whilst also a hemorrhage during the course of pregnancy may suggest an attempt at miscarriage, a consideration of this complication will not be entered upon.

Within these limitations, therefore, the causes of hemorrhage may be tabulated as below, and will vary according as the woman is a primipara or a multipara; for, whilst conditions present in the first instance may all be influential in the second, there is one condition frequently present in the second which, of necessity, must be absent in the first. The causes, then, are:

*a.* In the primipara:

1. Menstruation.
2. Erosion of the cervix.
3. Diathetic diseases, in the course of which hemorrhages are likely to occur.

4. Partial separation of the secundines.

5. Congestion at the menstrual epoch.

6. Frequent and violent sexual intercourse, particularly at the time when the menses might return.

7. Cancer, fibroids, polypi.

8. Endometritis existing at the time of conception.

9. Cystic disease of the chorion.

*b.* In the pluripara:

1. All the above.

2. Laceration of the cervix.

*Menstruation.*—The recurrence of menstruation for two or three periods after conception must be admitted as possible, since up to the end of the third month the menstrual blood can have exit. Even here, however, it seems likely that the flow must be limited in amount and duration; else the not as yet firmly attached ovum would run great risk of being washed out in the current, and the fruit of coition be thus brought to an untimely end. Many conceptions are in this way, doubtless, interfered with. Cases where the menstrual flow is said to persist throughout the whole period of pregnancy must be looked upon with suspicion, as far as the inference that the blood comes from the uterine cavity is concerned. There are, as will be seen, other sources of hemorrhage which, apart from menstrual

habit, will explain satisfactorily the occurrence. It is, therefore, wise, if consulted in such a case, to make a specular examination, in order to determine the source of the blood. That occasionally the menses do recur, and in profuse amount during early pregnancy, without interrupting its course, the case I propose relating will prove, though it may inferentially be just as well considered as having as its basis an inflammation of the endometrium. The reason for this inference will be given in its proper place; meantime, the case is related not only on account of what at first was doubtless the recurring menses, but also because it is an instance of conception during lactation.

Mrs. S. . ., Vpara, æt. 30, came to the Polyclinic to consult Professor Mundé on account of a severe hemorrhage of nine days' duration, at about the fifth month of utero-gestation. Her last delivery was seven months previous, and she was still nursing the infant. She gave a history of irregular menstruation from its first appearance. During the present pregnancy had menstruated as usual every three to four weeks for the first two months, and then had missed a period. The fourth period re-appeared and lasted for nine days. She declared she felt the fetal movements; in the intervals between the flow, she had a yellowish-white discharge. On physical examination, the uterus corresponded in position to what is usual at the fifth month. There was neither erosion nor laceration of the cervix. The flow evidently came from the uterine cavity. There was no other sign of impending miscarriage. Ballottement could readily be obtained. The patient was sent home to bed, with orders to return in two days, if the flow did not cease, and, in case it did cease, to report in two months. Unfortunately for the scientific value of the case, she has displayed the gratitude usual to dispensary patients, and up to the present has not been seen again.

As to the treatment of recurring menstruation, it is self-evident. If the patient has missed but one period, it is highly unlikely she will consult a physician, for the reason that she has no evidence as yet of the existence of pregnancy. Such a case will either lose the fructified ovum, or else, before the next period becoming subject to the symptoms which accompany the early months of pregnancy, when the flow recurs for a second time, will seek advice. It will be the part of wisdom then to make a specular examination, by means of which conditions to be referred to may become apparent as the cause, and receive early treatment. Should none of these exist and the blood be seen coming from the external os, the treat-

ment indicated is simply rest in bed. It is useless to prescribe ergot. If this drug has any effect on the uterus in the early stage of impregnation, that effect will be the one desired, as far as cessation of the hemorrhage is concerned, but at the probable expense of the ovum. If any drug is indicated, it is opium or viburnum.

*Erosion of the Cervix.*—The discharge from an eroded cervix is often only reddish-white or reddish-yellow in color. It may, however, assume the magnitude of an alarming hemorrhage. Usually it will be found to underlie what is called "spotting." The lesion is by many improperly called an ulcer. It is nothing of the kind, any more than an abrasion of the nose is an ulcer. It consists in a laying bare of the capillary layer of blood-vessels, whence, either through rupture or transudation, the blood comes. Ordinarily, the examining finger alone can make a probable diagnosis from the sensation of "velvety softness," as Mundé terms it, which is received. In pregnancy, however, owing to the softness of the cervix which normally exists, the speculum is necessary to diagnosis. The cervix once exposed, a reddish spot of varying size will be seen, from which the blood oozes. The diagnosis is made still more complete by the application of the curative remedy, the nitrate of silver solution (3 i. to 5 i.), when the abrasion will turn white, from the formation of the albuminate of silver. The presence of such a lesion, evidently, is a sufficient explanation of any hemorrhage without having recourse to the theory of recurring menstruation or impending miscarriage. The use of the speculum leads to the differential diagnosis, and the above-mentioned treatment will in a short time usually effect a cure. Of course, care should be taken, when making the applications, lest miscarriage be induced.

The frequency of this condition during pregnancy is noteworthy, and furnishes another reason for the precaution already insisted on, always to make a specular examination where there is any reddish flow, seeing that otherwise there is great chance of the physician making the erroneous diagnosis of impending miscarriage. Dr. Paul Lieven, when Scanzoni's assistant at the Wurtzburg Lying-In Hospital, examined one hundred pregnant women with the end in view of determining in what proportion of cases the os was eroded. His results



appear in Scanzoni's "Lehrbuch der Geburtshilfe," Vol. I., 1867, p. 178. Out of one hundred cases,

The cervix was normal in, . . . . .	19
Slight erosion of in, . . . . .	24
Follicular enlargement in, . . . . .	22
Mucous polypi in, . . . . .	2
Papillary enlargement in, . . . . .	30
Cockscorn enlargement in, . . . . .	3
Total, . . . . .	100

At the time of Lieven's writing, a lacerated cervix was not recognized, but was uniformly considered an ulcer, as it is still by a few non-progressive, or rather not-to-be-persuaded, medical minds. Many of the above cases, therefore, would nowadays come under the definition, lacerated. Eliminating these, we will still have a large proportion of erosions, varying from the simple catarrhal to the cockscorn papillomatous. It is significant, too, that only nineteen out of one hundred presented normal cervixes.

*Diathetic diseases.*—There are certain affections during whose course hemorrhages from the mucous surfaces are usual. Such are scurvy and hemophilia. A woman suffering from an affection of the kind, is just as likely to have hemorrhages whilst gravid as when not. It is just possible that she is more so; for, as is well known, the composition of the blood becomes markedly altered during pregnancy, gaining in watery constituents and losing in fibrin and red corpuscles. It is far easier, hence, for it to transude. The diagnosis, of course, is obvious without recourse to a uterine explanation, and the treatment is that which suggests itself for these conditions when pregnancy is not present.

*Partial separation of the secundines.*—That this accident is likely to cause more or less hemorrhage is too obvious to need more than passing reference. The treatment, of course, is rest in bed.

*Congestion at the menstrual epoch.*—It is a function of the uterus to receive and give exit to blood every four weeks, possibly itself add to it, and this being its habit, it is but natural for it endeavor to keep on fulfilling the function, even though containing an impregnated ovum. Since, however, the cervix as well as the body becomes congested, it may fairly be presumed that the hemorrhage, if any, comes from the cervical

canal alone, particularly in cases where the gestation has advanced to nearly the fourth month. The treatment is here also absolute rest in bed, and abstinence from sexual intercourse at the time for the return of menstruation.

*Sexual Intercourse.*—This cause is, I doubt not, a very common one. It holds true more especially in the case of the newly-married who have not as yet learned the necessity of restraint as the time for menstruation approaches. The reason for the effect is not far to seek; for coition of itself attracts blood to the genital organism, and brings into play a greater degree of congestion than is normally present every four weeks. Where a degree of descensus exists, and in the early weeks of pregnancy such is the case, it is also probable that the penis impinging on the cervix shocks, so to speak, the uterus, and these repeated shocks, inferentially, may lead to a partial separation of the secundines and its consequent hemorrhage. At least such an explanation is the only one which will fit cases of which the following is typical:

Mrs. K., æt. 30, married six months; general health good; no history of antecedent uterine trouble. Regular in her menstruation up to five weeks before I saw her. She consulted me to know if she were pregnant. Having passed a period, though previously regular, having slight morning sickness, the uterus being slightly enlarged and uniformly so, the vaginal mucous membrane presenting a bluish tint, I told her there was strong presumptive evidence of pregnancy. Two weeks afterwards she came to me, flowing moderately. Specular examination revealed nothing to account for the hemorrhage. As the same rational and physical signs existed as previously, I anticipated a miscarriage and sent her home to bed. The next day the flow had ceased. A history similar to this was given at various intervals for two weeks longer, when, on close questioning, the fact was elicited that her husband, a strong and vigorous man, was in the habit of having intercourse with her twice and sometimes three times each night with few exceptions, and that usually after each connection there was more or less hemorrhage. This gave me a clue to the probable cause. Sexual intercourse was forbidden for one month, and there was no more flowing. I lost sight of the patient, but heard that she was delivered at term, and that the placenta was adherent.

If this last be true, it suggests itself that repeated sexual commerce during the early months of pregnancy, not only may be a cause of hemorrhages, but also, through them, of morbid adhesions.

*Epithelioma, fibroids, polypi.*—That these may cause hemorrhage during the gravid state as well as during the non-gravid is self-evident. Indeed, owing to the superadded degree of congestion present during pregnancy, hemorrhages are more likely to occur. The cause once determined, if the hemorrhage be slight, nothing need be done; if, however, there is sufficient bleeding to endanger the mother, the same treatment is indicated as though she were not gravid. Small polypi, pediculated from the cervix, being sources of cervical irritation, and therefore likely to induce miscarriage, may well be snipped or twisted off without any ill effects as regards the continuation of the pregnancy.

*Endometritis existing at the time of conception.*—Ordinarily, the ovum, on reaching the uterine cavity, finds a healthy mucous membrane prepared for its abode in case it becomes impregnated. Should, however, an endometritis exist at the time of conception, the soil for the seed is no longer healthy, but is in a state of hyperplasia, which, if the ovum engraft itself, at times also spreads to the decidua reflexa. If the inflammatory process be an intense one, miscarriage follows; often, however, the change is slight, the woman goes to term, and only on examination of the afterbirth is the process that has existed determined. The etiology of this endometric inflammation, of this hyperplasia, is obscure. "In Virchow's case there was syphilis; in others, it was not so. One of the women was chlorotic, another previously suffered from endometritis, and a third had conceived very soon after delivery; and it may, therefore, appear that this proliferative process is, somehow, connected with an irritation of the mucous membrane prior to conception" (Manual of Midwifery, Karl Schroeder [Transl.], page 124 *et seq.*). In mild cases, the pregnancy may run a smooth course without accident of any kind. Occasionally, however, towards the end of the third month, there are irregular discharges, varying in color from red to yellowish-red and white. On examination, of course, nothing explanatory of the condition will be found; but a careful study of the history of the patient will many times help us out of the difficulty. Take, for instance, the case reported in this paper under the heading menstruation. The patient had had five children in quick succession, and was again five months



pregnant whilst nursing a seven months' infant. This was indeed rapid conception after delivery, a cause, according to Schroeder, of endometritis. The patient, also, had a yellowish-white to a reddish-white discharge in the intervals of her supposed recurrent menstrual periods. Altogether, I am inclined to class a case of this nature under the heading of endometritis. If like cases are rare, their significance is all the more weighty. It is not at all unlikely that endometritis, if appreciated as a cause of hemorrhage during pregnancy, will explain certain cases more satisfactorily than a resort to the theory of persistent menstruation. As to treatment, it must, of course, be purely expectant. Intrauterine medication is, from the very nature of the case, contra-indicated; little is to be expected from general medication.

*Cystic disease of the chorion.*—Little is known of this disease, except that it consists in a dropsy of the chorion villi, limited to some or affecting all. The cause is variously ascribed to the death of the fetus, to a morbid condition of the decidua, or to maternal syphilis. Whatever the etiology, if the whole chorion be affected, the fetus will die; if, on the other hand, the disease be limited to a portion, the fetal nutrition is only slightly interfered with, and the pregnancy may go on to term. Symptomatic of this affection is a larger uterus than corresponds to the date of gestation, an increase in the early subjective accompaniments of pregnancy, and, at about the third month, at times before, the occurrence of a reddish-watery discharge, containing portions of the degenerated villi. This last point establishes the diagnosis with certainty. Treatment must be purely expectant until assurance is gained that the extent of the disease is such as to render improbable the existence of a living embryo. This assurance is given by profuse hemorrhages, and then the indication is to empty the uterus. The os must be dilated, and either the finger or the curette used to clean out thoroughly the uterine cavity. A hot, carbolyzed intrauterine douche will control the hemorrhage; if not, iodine applied to the endometrium will be effective.

*Laceration of the cervix.*—The non-gravid woman with a lacerated cervix is subject both to meno- and metrorrhagia. Indeed, this is one of the indications for trachelorrhaphy. As the presence of a laceration is a powerful bar to conception, so

also it is often the cause of miscarriage. During the course of a pregnancy, therefore, within a uterus whose cervix is lacerated, hemorrhage may occur as the result of separation in part of the secundines. Again, as in the non-gravid state, so also in the gravid, a reddish discharge is no infrequent accompaniment of laceration, and this discharge may suggest an impending miscarriage. Specular examination, and Sims' speculum is here a *sine qua non*, will make the distinctive diagnosis. If a laceration be determined, the application of palliative measures, such as tampons saturated with the glycerite of tannin, is indicated, and will be of benefit, not only because the discharge is thus modified, but also because through their beneficent effect on the cervical lesion, the chances of miscarriage are, in a measure, lessened. As to the question of operation, all that can be said is, that the opportune time is before conception. Whilst cases are on record where, in ignorance of pregnancy, Emmet's operation has been performed and the pregnancy gone on to term, it is not sound practice, nor necessary to operate at this period.

In any given case of hemorrhage during the early months, it is well to remember that there is another locality whence blood may come besides the genitals. It is always well to examine carefully for hemorrhoids or rectal disease before accepting the patient's statement that the blood comes from the vagina.

Such, in brief, are the main causes of hemorrhage during the early months of pregnancy. They are sufficient in number to prove the absurdity of always jumping to the conclusion that a woman is endeavoring to miscarry because she has had a greater or less hemorrhage. They also allow one to lay down the stringent rule that it is always advisable to examine, both digitally and visually, any patient who has as a symptom a reddish flow from the vagina during the gravid state. If any lesion be detected, it had best be treated immediately as far as is consistent with the safety of the fetus. After all, these are simply considerations which should enter into the management of every pregnant woman. If consulted in the early months, the physician should not rest satisfied with determining the expected date of delivery, but if occasion demands, should correct every condition before labor which might, at that time, or after-

wards, prove annoying, if nothing else. Thus will labor, a physiological process, be shorn of much of its pathology, and women bear children as nature intended—with pain, but with the greatest possible safety.

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A CONTRIBUTION TO THE ACTIVE MANAGEMENT OF  
ABORTION IN THE EARLY MONTHS.

WITH TABLE OF SIXTEEN CASES.

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BY  
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THE question as to which was the proper course to pursue in the management of cases of abortion in which there had been an imperfect delivery—the immediate, which would almost surely demand the use of instruments, or the expectant, in which the expulsion of the uterine contents, let it be the ovum or any part thereof, was left more or less to nature—was one which I was called upon early in my professional career to consider. The authors to whom I had access advised the latter course, and I followed their teachings for a short time only, as a case soon presented itself in which the woman would undoubtedly have died if the expectant course had been followed longer. As it was, I was forced to adopt a more energetic course of treatment, and with a pair of common placental forceps, belonging to my obstetrical case, I snipped away and removed several small pieces of adherent decidua. After removing all shreds of membrane from the endometrium, the operation was completed by swabbing it well with tinct. iodine. All hemorrhage now ceased, and a slight watery discharge followed for twenty-four hours. The excessive loss of blood had greatly reduced the patient, and it took six months to restore her to her former health. The operation of removing the adherent decidua lasted only a few minutes. No pain was produced, no resentment of the interference by the uterus, or appendages, in the way of inflammation, or even soreness,



*Table of Sixteen Cases of Abortion in the Early Months of Pregnancy in which Relief was Secured by Operative Interference.*

No.	Year	Dur. of Preg.	No. of Preg.	Cause of Abortion.	Length of Retention.	Symptoms Calling for Removal.	Method of Removal.	Result: Immediate or Final.	Remarks.
1	1877	7 wks.	4	Unknown..	4 days...	Dangerous hemorrhage.	Placental for- ceps.	Immediate relief.	The great loss of blood. Final recovery slow.
2	1878	6 "	1	"	10 "	Hemorrhage ...	Placental for- ceps.	"	The loss of blood had not been great. Recovery rapid.
3	1880	2 mos..	..	Supposed intentional.	30 "	"	Curette forceps.	If hemorrhage ceased; some chronic peritonitis remained.	She was suffering from local peritonitis when I operated.
4	1881	2 "	2	Unknown..	20 "	"	"	Immediate relief.	Waited several days for the relief of local peritonitis before operating.
5	1881	3 "	2	Drugs, with intent.	2 "	"	Finger and curette forceps.	"	Membranes generally adherent.
6	1881	2 "	..	Unknown..	10 "	"	Curette forceps.	"	This woman was the mother of several children.
7	1882	4 "	3	Polypoid tumor.	5 "	"	"	"	Remnants of secundines only remained to be removed.
8	1882	2 "	..	Intentional	..	Convulsions and decomposition of fetus in utero.	"	Good.....	Inflammatory action was setting up when the operation was done; a general peritonitis followed; recovery after a long time.

9 1883	2 mos.	2	Unknown.	15 days.	Hemorrhage....	Curette forceps.	Immediate relief.	Operated as soon as called.
10 1883	3 "	..	"	2 hours.	Uterus not cleared of membranes.	"	Rapid recovery..	She had aborted one year before. The retained membranes passed by decomposition, producing some blood poisoning.
11 1883	4 1/2 "	..	Injury....	Removed at once.	Slow progress; threatened convulsions.	"	"	A subject of repeated abortions. Progress delayed by an elongated hypertrophied cervix.
12 1883	3 1/2 "	1	Unknown.	48 hrs; 4 or 5 d'ys.	Hemorrhage....	Curette forceps and dull curette.	Good.....	The hemorrhage did not stop till Monsell's solution was passed up to the fundus.
13 1883	6 w'ks.	..	"	6 weeks.	"	Curette forceps	Immediate relief.	A subject of repeated abortions; hypertrophic cervix; used sponge-tent; operated as soon as called.
14 1883	3 1/2 mos.	5	Lacerated cervix.	..	Decomposition of fetus; foul discharge, etc.	"	"	A case of missed abortion at time of death of fetus, two and one-half months previous.
15 1883	5 w'ks.	7	Unknown.	10 days.	Hemorrhage....	"	"	Operated as soon as its being an abortion was suspected.
16 1883	6 "	2	"	7 days.	"	Finger and curette forceps.	"	Operation had to be repeated, as some membrane was left in first operation.

which would almost surely have been the result if the finger had been used, as advocated by some, to detach and remove the membrane. Since my satisfactory experience in that first case of the use of instruments in the completion of abortion, I never suffer a case to go on unrelieved, beyond what I think is a period of safety, and therefore generally act at once, if in my power so to do. Patients sometimes object to operative measures, on account of prejudice, timidity, or too great modesty, even though warned of the dangers; delay may lead to complications in a few hours, such as will make a later removal difficult and the case may then result seriously, or even fatally. No positive rules can be adopted as a guide of how long intervention should be delayed. Cases may occasionally be left to nature to complete the work for several days, and no danger arises, but certainly the greatest safety, and that is what we seek, lies in as little delay as possible.

The foregoing table of cases gives results of instrumental intervention in sixteen cases. This is no partial report, giving a few successful cases and leaving out others that were less so; but is a complete report of all the cases I have so treated. In almost all of these cases, hemorrhage was the one prominent feature demanding interference. But it was not the invariable feature; other complications or symptoms came prominently to view, protesting against further delay.

In one case (8), a hypertrophied cervix had delayed the expulsion of the ovum. No hemorrhage had occurred. My treatment was directed to the prevention of the threatened abortion. Several days had thus passed, during which time my efforts, as I afterwards learned, were being more than counteracted by the patient, whether wilfully or ignorantly I do not know, and I was admonished to no longer delay active interference by the sudden advent of convulsions, a grumous discharge from the uterus, tenderness and tympanites over the hypogastrium, with elevation of temperature. A general peritonitis followed and nearly destroyed the life of the patient. An earlier removal of the uterine contents would have saved the involvement and inflammation of the peritoneum. The offending and decomposing fetal mass was promptly removed as soon as symptoms indicating the necessity were manifested, but yet not soon enough to prevent septic poisoning. We have



no means of measuring the rapidity with which the blood may become loaded with poisonous matter, or why it is that sometimes cases, even when all the necessary elements are there, will enjoy so great immunity from infection.

In another case (11) in which I was called in consultation at the last moment, there was a history of convulsions on a former occasion, with a threatened repetition in the present instance. Hemorrhage had been present for several days. The physician in attendance had not been idle, but a long conical or hypertrophied cervix stood in the way of an easy completion of the abortion. There was some dilatation, but the cervix was hard and rigid. It would have required the efforts of nature for hours to have expelled the uterine contents. The patient was anesthetized and an attempt made to introduce the finger, which resulted in a failure, on account of the unyielding cervix. The curette forceps was then called into requisition, and the removal of the ovum was rapid and painless.

In case 4, there had been two previous abortions. After the second one, I had discovered a bilaterally lacerated cervix, and concluding this to be the cause of the abortions (from the history of the case in general and from the fact that the liquor amnii had begun to drain away in both instances at about the same date of pregnancy, and when the fetus was thrown off, it was found to be mummified, etc.), and the woman's bad health, I began a preparatory treatment with the operation of closing the cervical rent in view; but unfortunately she became pregnant again before the objective point was reached. Death of the fetus, as before, followed in the course of some two and one-half months. The symptoms indicated that nature was trying to complete the abortion, but, as the uterus seemed wanting in tone to expel its contents, and the vagina was filled with shreds of decomposed membrane which gave off a sickening odor, I at once cleared the uterus of its contents, using therefor the curette forceps, and also the dull curette of Thomas, to remove what detached membrane had escaped the forceps; and finished up the case by washing the uterine cavity with warm carbolized water, and lastly injecting some two drachms of tincture iodine well up to the fundus, through a long-nozzled syringe. The recovery was uninterrupted.

Some of these cases were acted on after the development of

complications that would have exhorted even the most conservative physician to act. The course here was plain; but in some of the cases, those seen at once, no time was given for the advent of complications. The interference was prompt, and the response for good prompt. The patient took no risks of blood-poisoning or other dangerous sequelæ.

I have made mention of the curette forceps. I refer to those of Dr. Emmet, described on page 619 of his "Principles and Practice of Gynecology," and also by Dr. P. F. Mundé in "Minor Surg. Gynecology," page 286, designed by Dr. Emmet as a substitute in certain cases for the curette. They have been my principal dependence, and in many cases were all that I used in the removal of retained membranes, or even the fetal product entire.

As we do not often know how much of it has been expelled, unless there be dilatation enough present to admit the finger, which is rare, the operation is begun to remove whatsoever is giving offence; the forceps are thus good as a means of diagnosis, and in the hands of a person ordinarily expert, are all but harmless. The forceps recently described by Dr. Paul F. Mundé (AMER. JOURN. OF OBSTET., Feb., 1883) are shaped somewhat differently and would no doubt answer better than those of Emmet where the retained decidua is attached to the fundus, on account of the blade being broader at the point. The dull curette I find comes in good play occasionally when the membrane is detached in shreds of small particles and lies loose in the uterine cavity. A few sweeps of the instrument will collect and on withdrawal will bring away these small masses. But the patient always complains of its use. I have never attempted to use it in the manner recommended by Dr. Mundé in this JOURNAL for Feb., 1883, but do not doubt that his plan is a good one, and that it will act admirably in some cases, especially in those where the membrane is large and adherent *en masse*.

It is rarely necessary to dilate the cervix for the introduction of these instruments. The uterus will generally be found soft, and the os more or less patulous, so that the forceps can be introduced, if need be, with the patient in the dorsal decubitus. But as I prefer swabbing the cavity with tinct. iodine after the removal of the contents, for its hemostatic as well as antiseptic

effect, the Sims position with the Sims speculum is preferable. The uterus can then be fixed with a tenaculum, and if the dilatation is hardly sufficient, a little force can be used in the introduction of the forceps, and after being introduced to a point above the internal os, the blades can be separated slightly, increasing the dilatation. But in many of those who are in a habit of aborting, it will be found necessary to dilate as a preliminary measure, as the cervix will be found long and conical, or generally hypertrophied, and very little dilatation exists. It is in this class of cases that we have to deal most often with retained and adherent placental tissue. The small curette recommended by Fritsch, of Breslau, Germany, in the Feb., 1883, number *AMER. JOURNAL OF OBSTETRICS*, would serve a good place here. If there is any degree of dilatation at all, or at least to such extent as to admit the sound, it would save the time necessary for, and the dangers incident to dilatation. In many of these cases of hypertrophied cervix, subjects of repeated abortions, evidences of previous inflammations of the tissues surrounding the uterus warn us of the dangers, and admonish us to make our manipulations as simple as possible.

A case is occasionally met with in which the pelvis is shallow, the perineum relaxed, the uterus low down, soft, and easily dilated, and the os sufficiently patulous to allow of the easy introduction of the finger to the fundus, by using counter-pressure to force the uterus down on the finger, and thus maintain it in steady position, and fetal remains may thus be removed. But the above conditions should be present, else the finger will be of no service, or injury be done to the cervix. I have one case in mind in which a physician of experience removed by the finger the retained product of abortion. The woman said the pain he caused was agonizing, and she was left the victim of prolapse of the uterus, and a long train of nervous manifestations. Pregnancy never again occurred, and on examination four years afterwards, I found the cervix lacerated on one side up to the vaginal roof, and I have no doubt, from the history of the case, that the laceration was produced by the physician in his efforts to reach the fundus with his finger through a contracted and perhaps rigid cervix. And then it has happened to me that, after I had detached and removed all that was possible with



the finger, the hemorrhage has continued and ceased only after the forceps or curette had been used to complete the work.

It is rapidly becoming, if it has not already become, the practice of modern medicine (in its entirety) to make all manipulative interference as painless as possible, at the same time never losing sight of the great problem of antisepsis, whether as taught by Lister and his followers, or by that great school who have so successfully adopted rigid cleanliness as their standard. But allow me to say that to Lister most of the credit is due of having, by continual agitation, brought to the attention of the medical world the necessity for a radical change in the management of cases, medical as well as surgical, especially in the latter. It is unnecessary to speak of the painfulness, nor mention the danger of crowding, pressing, and forcing the finger up to the fundus through a sensitive and constricted cervix, as every practitioner has had some experience in that direction, and knows that if he would save his patient from exhausting and agonizing pain, he must deaden the sensibilities with anesthetics. The instrumental removal is comparatively a painless plan, rarely necessitating the use of anesthetics, and moreover it is the only means by which we can be sure of removing every vestige of fetal remains. In the rapid removal of the uterine contents in cases of incomplete abortion, we are carrying out antiseptic principles. The danger of blood poisoning by the decomposition of retained tissue is spoken of in every text-book of the day, if the subject is mentioned at all, and even if it were not so mentioned, one does not need to be long in the practice of medicine to have the facts brought plainly to mind. It is probably as much to the general advance of knowledge of medical men in reference to the subject of the antiseptic treatment of disease, that the present advance in the after-treatment of abortion is to be attributed, as to its consideration on account of the hemorrhage. And hemorrhage has heretofore been held up by obstetrical writers as the signal for interference, and if a hemorrhage became so great as to threaten the life of the patient, the removal of the offending uterine contents might be adopted. Leishman (page 383) says in the course of his remarks that, "if the ovum has been expelled, and the os closes, and the placenta is retained, if the os is so contracted as to prevent the introduction of the finger, that, unless the hemorrhage is

alarming, the safest course is to preserve an expectant attitude." And after discoursing (page 384) on the use of the placental forceps of Levret, and the wire crotchet of Dewees, expressing doubt as to their utility and safety, and of instruments in general, says "if attempts at removal of the mass fail, the only other recourse which remains to us is in the use of ergot, or some other oxytocic agent." And on page 385 he says that "under ordinary circumstances abortion is attended with but little risk to the mother and the cases in which her life is placed in jeopardy are therefore relatively rare." And further, after all he recommends has been tried, "if still retained fragments of placenta give rise to hemorrhage, the patient must not be permitted to rise until all trace of this has ceased, and then the health that has suffered by the great loss of blood should be restored by the use of chalybeate tonics, etc. He evidently had no great danger but that from loss of blood in view; it is true he speaks of putrefaction of the retained placenta (page 378) and of the possible danger of blood poisoning, but he does not give the danger the prominence that is given by the more recent writers. Playfair, in his work (page 235), takes a better view of the subject. He says, "as long as any portion of the membranes are retained in utero, the patient is necessarily subjected to considerable risk, not only from the continuance of hemorrhage, but also from septicemia," but in considering the matter of treatment, on page 240, he says, "Dr. Priestley had strongly insisted on the importance of removing the secundines as soon as possible." But he advises against forcible means for the removal of retained membranes, and advises the use of the plug or sponge-tent to control hemorrhage, and disinfectant intrauterine injections to prevent decomposition of the secundines. The recent advance in the field of gynecology has had its effect on the obstetrician, and it is probably no more plainly shown anywhere than in the recent advance in the management of abortion.

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DR. J. LEWIS SMITH'S CASE OF PERNICIOUS REMITTENT  
FEVER.

## ADDITIONAL REMARKS

BY

FRANCIS L. HAYNES.

THE foundation of Dr. Smith's position is that the poison which killed the patient was not introduced into the system through the genital tract. I maintain the opposite view.

Dr. S. must show that at no time was septic matter present in the uterus or vagina. If I can make it appear probable that septic matter was present, then no reason exists for considering the case in any way an uncommon one, or for not classifying it with those which are described by most modern gynecologists under the term septicemia.

The patient was confined on May 22d; but no mention is made of uterine examination until May 28th, although decided symptoms of blood-poisoning were present on the 24th. There is nothing in the original article to lead the reader to believe that the entire uterine cavity was explored. The words used are: "A careful examination," etc. (p. 157). Nor is this point very definitely settled in the "reply." Two obstetricians "made careful intravaginal and intrauterine examination, carried their finger as far as they could extend within the uterus, and found no stench," etc. (p. 842). The doubt still remains whether these fingers were carried as far as the fundus and into the remotest corners of the cornua. If so, why was the fact not plainly stated?

If it be granted that such an exploration was made, no evidence is presented that more or less septic matter (perhaps fluid) was not present at an earlier date. This may have been expelled by uterine contraction; and in such a case any fetor would have been removed by the vaginal injections, although it is well known that fetor is not a necessary attendant on septic material.

Is it not very improbable that a uterus which had expelled



clots on the second day after confinement, an inert uterus—one into which the hand had been introduced in extracting the placenta, and which had not subsequently been washed out, was in an aseptic condition?

Although personally I believe that in such cases the uterus generally contains a considerable quantity of septic matter, yet it is universally acknowledged that a very minute portion is sufficient to produce fatal poisoning, as in the famous instance of Dr. Ruther, who was supposed to have infected his hands and thence his patients, by an ozena with which he was afflicted.

The disease which destroyed the patient is termed (p. 158) "ataxic malarial fever," elsewhere "remittent fever." It is stated (p. 160) that malaria, or "marsh miasm," was the cause. According to this view, the patient died of *ague*, to use a homely term. But in his second article, the author shows some doubt that *ague* alone was able to kill the patient.

"I designated the disease, perhaps unfortunately, pernicious remittent fever, because it had very decidedly the character expressed by these two adjectives, and because the history of the nurse appeared to show that marsh miasm was present in the bed chamber as one of the insanitary conditions, its action being intensified and rendered pernicious by something else, may be sewer-gas, may be water-closet exhalations" (p. 843).

Then, after all, it was not purely a case of *ague*, but *ague* complicated by something else. What was this something else? Dr. S. has little doubt that, if Playfair had attended the case, "he would have designated the disease septic fever due to miasm of some sort."

It begins to look as if Dr. S. thought his patient died of *septicemia*, not of *ague*.

Now, Playfair does not give marsh miasm or sewer gas as causes of *septicemia*. It is true that he admits the possibility of "infection from septic matter suspended in the atmosphere," but the whole context shows that he believes this to gain access to the system, not by the lungs or skin, but by the genital tract.<sup>1</sup>

<sup>1</sup> This is the passage, I think, to which Dr. S. refers: "It seems to me not improbable that the explanation of the fact that zymotic poison may in one puerperal patient run its ordinary course, and in another produce symptoms of intense *septicemia*, may be found in the channel of absorption. It is, at any rate, comprehensible that, if the contagion be

Dr. S. gently chides me for riding a hobby. I exercise in very good company. Playfair considers the use of antiseptic intrauterine injections "advisable even where there is no reason to suspect the presence of a local focus of infection. Mundé injects every puerperal uterus as soon as the temperature rises above 102°, whether the lochia are offensive or not.

Dr. S. seems to consider the absence of fetid lochia as conclusive proof of the absence of local septic poisoning. Drs. Mundé and Wylie (*OBST. JR.*, vol. xvi., p. 863 et seq.) both consider this symptom inconstant, and such has been my personal experience.

## CORRESPONDENCE.

### HEMORRHAGE IN NORMAL LABOR.

TO THE EDITOR AMERICAN JOURNAL OF OBSTETRICS.

SIR:—A paper read before the New York Academy of Medicine, by Dr. Rudolf Tauszky, and published in the July number of this JOURNAL, contains a few points which I desire to notice and criticise.

First, when the author protests against the teachings of Dr. Goodell in reference to the parturient woman being permitted to assume the upright position within three days after labor, I would beg to remark that such teaching, like all other, requires the exercise of sound discretion. But I admit that it is a more dangerous doctrine, all other conditions considered, than that which requires the absolute enforcement of the recumbent posture.

I am in a position to know a little of what I propose to say on the subject, having pursued each course about the same length of time, say over twenty years to each, and in no case since changing from this rigid enforcement of the recumbent posture has absorbed through the skin or the ordinary channels, it may produce its characteristic symptoms and run its usual course, while, if brought into contact with lesions of continuity in the generative tract, it may act more in the way of septic poison, or with such intensity that its specific symptoms are not developed." In other words, the poisons of typhoid fever and other zymotic diseases, when absorbed through other surfaces than the genital tract, produce diseases after their kind, and if absorbed through the genital, produce septicemia.

there been any cause for regret. Indeed, I have become so favorably impressed by the Goodell method that I always direct it to be followed provided there is no counterindication, and my general experience is that patients recover in one-third less time than under the old practice.

Dr. Tauszky refers to observations among savages. It was also my misfortune in early life to have a little experience in savage practices, and my recollection bears witness to the value of that knowledge when compared with later experience, and I have gradually learned to have more respect for details.

In regard to the management of the puerperal condition, I will merely remark that very many country practitioners dispense with the binder. On the subject of the amount of blood which a woman should lose during normal labor, the assertion of Dr. Tauszky that there should not be a drop of blood lost or seen after the completion of the third stage of a normal labor is astounding! When and with what race or nationality did and does he practise? The gravity of post-partum hemorrhage will not be disputed. But that *a drop* of blood lost after a natural labor is to be considered as an eminently dangerous symptom will certainly be news to a large number of obstetricians. I will not deny that in exceptional cases no blood whatever may follow the expulsion of the placenta, but I have seen but two such in a practice of nearly three thousand cases.

There was a time when such an assertion would have caused a great deal of needless anxiety. An assertion of that nature, made by a member of the New York Academy of Medicine at a regular meeting, and reported in a journal having the character of the AMERICAN JOURNAL OF OBSTETRICS without contradiction or criticism, except such as occurred during the discussion of the paper, would formerly have aroused an uncalled-for anxiety in a large number of cases. But there was also a time when I had little experience and little confidence in my own knowledge. Fortunately I have been able to add to my experience, and have so far increased my knowledge as to have learned to take the assertions of all men with some degree of allowance.

BALDWIN, MISS.,  
July 28th, 1883.

A. G. SMYTHE, M.D.

[We beg to call the attention of our correspondent to the notice at the head of each number of this JOURNAL, that we are not responsible for the views of contributors. In addition, however, we beg to assure him, in our personal capacity, that had we been present at the meeting of the Obstetric Section of the Academy of Medicine, at which the paper he criticises was read, the points he objects to, and perhaps others, would not have been allowed to pass unchallenged by us.—ED.]



# TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK. (A B S T R A C T.)

Meeting, March 20th, 1883.

DR. HANKS reported further on the

## CASE OF ACCIDENTAL PUNCTURE OF THE GRAVID UTERUS DURING THE PERFORMANCE OF OVARIOTOMY,

related by Dr. LEE at the meeting of November 21st, 1882. The patient had been sent home at about the end of the fifth week after the operation, no symptoms of miscarriage having been manifest. But about the third day after her return home she began to complain of pain, and a bloody discharge appeared at the vulvar outlet. At the end of thirty-six hours the patient was rapidly becoming exsanguinated, notwithstanding vigorous attempts had been made to check the hemorrhage; the os externum was dilating, and, with the assistance of Dr. H. C. Coe, the patient was anesthetized, the os was more completely dilated with the egg-shaped, hard-rubber dilators, traction was made upon the child's feet, and the decomposing body, becoming separated from the head, was extracted alone. Various means for extracting the head were then resorted to, but in vain: and, as hemorrhage had ceased, and as the patient was much exhausted, stimulants, ergot, and anodynes were administered, and she was allowed to rest until the next day, when the head was expelled without assistance, and she made a perfect recovery.

DR. LEE said that the case went to show the possibility, with our present knowledge of antiseptic methods, of the patient's complete recovery, and even a chance of her going on to full term. He therefore thought that Sir Spencer Wells' advice—to perform Cesarean section at once in these cases, since the patient would almost certainly die when the gravid uterus was punctured—in the light of our present knowledge, should not be accepted.

## PROLONGED INTRAUTERINE GESTATION.

DR. W. M. CHAMBERLAIN stated that three years ago he reported to the Society the case of a young, healthy woman whose menstrual interval was regularly twenty-eight days, who menstruated last on the 3d of June, and was delivered on the 6th of the following May, making the duration of intrauterine gestation eleven months and three days. This patient was pregnant at the present time with her fourth child, menstruation having ceased on the 23d of May, 1882. The duration of intrauterine gestation, therefore, had already reached ten months minus three days. The occurrence of these circumstances twice in the same patient, he thought,

established beyond doubt the fact that intrauterine gestation sometimes continued beyond the ordinary term of nine months. He asked if it had ever been considered necessary in these cases to induce labor.

DR. F. P. FOSTER remarked that, if the opinion that labor should be induced had ever been entertained, he supposed it had been based on the supposition that the child continued to grow after the ninth month, and was therefore liable to give rise to difficulty at the time of labor. Dr. Rodenstein, however, in a paper read before the Society about a year ago, had expressed the view that the child, having arrived at the degree of growth incident to term, did not continue to increase in size. He asked Dr. Chamberlain if in his case the first child was of unusual size.

DR. CHAMBERLAIN replied that it was not, and that delivery was normal, labor being of only three hours' duration. The epidermis, the nails, and the powers of co-ordination, at the time of birth, however, seemed like those of a child over a week old.

DR. A. S. CLARKE referred to the case of a woman, married the second time, who had ceased to menstruate in November, spent the winter in Florida, returned May 1st, and in the following September consulted him, saying that she had felt signs of life on the fourteenth of that month, although she could not believe that she was pregnant. On examination, Dr. Clarke found her pregnant, and his opinion was confirmed by Dr. Skene, and also, in October, by Dr. Thomas, who stated that the size of the fetal head and other signs pointed to pregnancy of full five months' duration. The woman was delivered on the 19th of March of the following year, making the term of pregnancy ten months and a half. Dr. Thomas and others who examined the patient had either mistaken a fetus of three months for one of five months, or else, as Dr. Clarke believed was true, the case was one of prolonged gestation.

DR. LEE remarked that so many elements of uncertainty entered into nearly all cases which had been reported as cases of prolonged gestation that they fell far short of positively settling the question under dispute—namely, whether intrauterine gestation ever continued beyond the normal period of nine months; and it was a pretty safe rule to reject all cases as evidence except those in which it could be proved that but a single exposure to conception had taken place. The circumstantial evidence in Dr. Chamberlain's case, however, was stronger than usual.

#### EXPLORATORY LAPORATOMY THREE YEARS AFTER BATTEY'S OPERATION.

DR. DAWSON said that three years ago he related before the Society a case in which severe ovarian and pelvic neuralgia was completely relieved by the removal of both ovaries, which were afterward found to be diseased. The Fallopian tubes were allowed to remain. Relief continued for two years; the woman went about her work in the enjoyment of good health. A year ago, however, she began to suffer again from pelvic neuralgia. And during the last few months the pain had become continuous, was exceedingly severe, and was growing worse, so that the patient had become clamorous for an operation, even at the risk of her life. From the fact that the pain was localized in the neighborhood of the Fallo-

pian tube on the right side, and because it was believed that thickening of the tube could be detected, he decided, after consulting with Dr. C. C. Lee and Dr. J. B. Hunter, to make an exploratory incision, and, if the suspicions proved well grounded, to remove the diseased tubes; and for this purpose she was admitted into the Woman's Hospital. Before proceeding with the operation, a more careful examination was made while the patient was under the influence of ether, and it was not possible to recognize that there was enlargement of the tubes. He proceeded to make the exploratory incision through the scar of the wound made at the previous operation. The patient had had more or less peritonitis, and adhesions were found to be so extensive that it was almost impossible to recognize the tubes at all; but they were found to be in a condition of atrophy. Without further interference, the abdominal wound was closed, and the patient did well. He asked what the prospects of relief were in such a case. The pain was so severe that the patient had again had to resort to the use of opiates, which must in time undermine her health. Other treatment gave no relief.

DR. HANKS asked whether the amount of chronic cellulitis and peritonitis from which the patient had suffered, and was still suffering, was not sufficient to account for her present pain.

DR. DAWSON remarked that the pain was so circumscribed, and pointed so unequivocally to the region of the tube as its seat, which was also exceedingly sensitive to pressure, that it was inferred that the origin of the trouble was in that organ.

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*Meeting, April 3d, 1883.*

DR. P. F. MUNDÉ presented four specimens, with histories, as follows :

I. OVARIAN CYST WITH LIMPID FLUID, SIMULATING A CYST OF THE BROAD LIGAMENT.

The patient was a woman, thirty-seven years of age, upon whom he operated at the Mt. Sinai Hospital in February last, for removal of a supposed unilocular cyst of the left ovary. She had noticed enlargement of the abdomen for a year before, and during the preceding three or four months the symptoms and the physical appearances had been such as to lead to the diagnosis just mentioned; but, on cutting down upon the tumor, its contents were found to be perfectly clear, like those of a cyst of the broad ligament, and for a moment it was believed that a mistake had been made as to the real origin of the growth. On proceeding with the operation, however, the tumor was found to have a broad pedicle, and to consist of a large ovarian cyst, with several small cysts at its base. The patient recovered, and left the hospital on the twenty-fourth day. The cyst contained sixteen pints of fluid.

II. BATTEY'S OPERATION FOR DYSMENORRHEA AND PELVIC NEURALGIA.

A nurse, a widow thirty-seven years of age, had been in the



medical wards of the Mount Sinai Hospital for about eight months, suffering from neuralgic pains in the pelvic region, extending down the right thigh, and from hysterical symptoms. At the end of that time she was transferred to Dr. Mundé's service, where she was kept under observation for about two months, with the hope that some relief might be given by other means than the administration of opium, which she had been taking in considerable quantity. The only pathological condition discovered was what was believed to be inflammatory thickening of the broad ligaments. There was no history of pelvic cellulitis. The patient stated that six years before she had suffered in a similar manner, and that Dr. Schramm, of Dresden, amputated the cervix for, as she believed, enlargement of the womb. The operation was followed by relief of two years' duration. The only means which seemed to offer any prospect of relief on the present occasion was Battey's operation, with or without removal of the tubes, and it was doubted whether, without more definite pathological indications, it was justifiable to resort to this, but he finally yielded to the patient's wishes, and, on the 28th of February last, performed the operation. Both ovaries with their tubes were removed. The right one was free, the left adherent, but no diseased condition was apparent. During the first twenty-four hours after the operation the patient was very irritable, and a large amount of Magendie's solution was required to keep her quiet. The temperature on the second day rose to 103°, but was controlled by cold water passed through a coil of rubber tubing placed upon the abdomen. The patient recovered entirely from the operation, the pain of which she had complained before ceased at the end of three weeks, all narcotics were stopped, and it seemed that an excellent permanent result was likely to be established. Soon, however, the old symptoms of neuralgia and hysteria returned, and were now worse than formerly. With regard to the title of the operation, Dr. Mundé agreed with the opinion expressed by Dr. Martin, of Berlin, in a recent publication—viz., that the term "Tait's operation" should be confined to that class of cases in which the diseased tubes were removed, either with or without the ovaries.

[This woman was ultimately removed by her friends to a retreat, and about three months after the operation committed suicide in a hotel in this city.]

### III. CYST OF THE BROAD LIGAMENT CONTAINING THIRTY-EIGHT PINTS OF FLUID.

A woman, thirty-eight years of age, who had never borne children, eight years previously had observed an enlargement of the abdomen that had continued to increase gradually. At the time of her entrance into the hospital the abdomen measured forty-five inches in circumference at the umbilicus. There was no cachexia whatever, only the size of the tumor annoyed her. A positive diagnosis of cyst of the broad ligament was made, and six weeks

ago thirty-eight pints of clear fluid were withdrawn. A careful bimanual examination showed that the flaccid cyst sac was situated in the right broad ligament. The patient left the hospital well several days later, and when she returned, after six weeks, no sign of the cyst could be detected by bimanual examination. The case was unusual only from the exceptionally large size of the cyst.

#### IV. PELVIC SARCOMA LIMITED TO THE CELLULAR TISSUE.

A woman, fifty-five years of age, the mother of a number of children, had suffered from an enlargement of the abdomen, accompanied by pelvic pains, which during the past two months had become exceedingly severe. The tumor was very tender to the touch, and was found to lie in the recto-vaginal space, pressing the vagina forward and downward and the rectum backward. It was tapped on two different occasions through the vagina, and a thick, bloody fluid, readily coagulable, was withdrawn, with a few flocculi of pus. The diagnosis lay between sarcoma with fluid contents and pelvic hematocele. After three weeks, the tumor slowly increasing in size in the mean time, signs of septic infection appeared and an opening was made through the vagina, and copious fresh coagula were discharged. The walls of the cavity were found to consist of irregular soft masses which could readily be scraped out with the vaginal depressor. Microscopical examination showed it to be a round-cell sarcoma, with but little fibrous tissue. The temperature rose to 103°, and the patient died of exhaustion on the fifth day after the operation. Post-mortem examination showed that the disease was limited to the cellular tissue in the recto-uterine space, neither the uterus, the ovaries, nor any of the other organs in the pelvic cavity being in the least involved. He had not been able to find a similar case recorded in medical literature, although sarcoma of the uterus and of the ovaries was not very uncommon.

DR. W. R. GILLETTE remarked, with regard to the first case, that six weeks ago he withdrew from an abdominal tumor fluid which had the exact appearances of fountain water, and those present supposed it belonged to a tumor of the broad ligament, but it proved to be one of the ovary with a small pedicle. He had had a similar case a few years ago.

DR. J. B. HUNTER had seen several cases in which the fluid withdrawn from an abdominal tumor before its removal was perfectly clear, as in cases of cysts of the broad ligament, but which afterward proved to be cases of ovarian tumor.

DR. LEE thought that the usual turbidity of the fluid of ovarian cysts was due to either an acute or subacute inflammation of the lining membrane arising from pressure by surrounding organs. Where the cyst grew rapidly, and pressure did not exist, at least in great degree, the fluid was likely to be clear. This view was also entertained by the pathologist of the Society and by other authors.

DR. GILLETTE, referring to the second case related by Dr.

Mundé, remarked that he had at present two patients under his care upon whom he hesitated to perform Tait's operation, although it would seem to be indicated by the subjective symptoms, mainly for the reason that, as in Dr. Mundé's case, the operation so frequently failed to give permanent relief, and also because the symptoms apparently indicating the operation might pass away in the event of an assumption of new sexual relations in the patient's life.

This latter phase was illustrated by the following case: In the spring of 1882, a widow consulted the doctor for constant neuralgic pains in the pelvic regions, by which her life had been rendered miserable. She gave a history of having had two or three attacks of pelvic cellulitis some time previously, for which she had been treated by several physicians on the Pacific coast. All the treatment, however, had failed to relieve her of her persistent pain in either ovarian region. Her general appearance was that of a woman in good health and well nourished. Her menstruation, she said, was painful and irregular as to time, but pretty constant as to quantity. This had been her habit through life. She had never been pregnant. Upon examination, the pelvic organs were extremely sensitive, and there was considerable pain over either ovarian region upon pressure. There was so much adipose tissue that it was impossible to determine through the abdominal wall whether there was any tubal enlargement or not, and through the pelvic region it was utterly impossible to make any satisfactory examination of the condition. From her history, he presumed the case was one of pyo- or hydro-salpinx; and his advice was that, as a last resort, Tait's operation should be performed. She stated that, if her sufferings should continue as they had, she would not hesitate, as she was perfectly miserable as she was. During the summer, however, she took a trip to Europe, and while on the steamer met a gentleman to whom she became engaged, and, on her return from Europe, they were married. From that time all pain disappeared entirely, and, so far as she knew or the doctor could ascertain, she was as well as any woman he had ever met. There was not the least degree of pain on examination, and the introduction of the probe into the uterus, which she could not tolerate previously, and which indeed at one time almost lighted up a cellulitis, was borne with perfect impunity. There was no tenderness over the ovaries, and there was no point of tenderness to be elicited anywhere, and nothing to indicate that there could be, by any possibility, any disease whatever of the pelvic organs.

This case, undoubtedly, was one not at all uncommon among widows—simply one of reflex irritation consequent upon ungratified sexual appetite. The lady herself, who was a very intelligent woman, did not hesitate to join the doctor in this his last diagnosis of her condition.

Another of the cases to which reference had been made, and which would seem to call for Battey's or Tait's operation, was that of a woman who had been a mistress, but who was now under a certain religious restraint. She had changed her sexual relations, her pelvic symptoms had developed, and she had hystero-epilepsy in addition to pains referable to the pelvis and ovarian regions. No enlargement of the tubes had been demonstrated in her case, but all her other sexual organs, so far as they could be examined, were in a highly hyperæsthetic condition, and at times apparently almost in a state of inflammation. In the opinion of the speaker,



this case was almost identical in many of its features with the other. The patient had formerly indulged in sexual excesses. She had been seen by several physicians, and it was a question with them whether an operation for the removal of the ovaries or tubes was justifiable or not.

These cases were either or both of them typical of cases heretofore operated upon according to Battey's method, and there could be no question, probably, that, if the operation of Battey had been performed, and the ovaries removed, all pelvic symptoms might have disappeared as a matter of supposed natural consequence; but the fact that one of them had been cured by the resumption of a normal function was very interesting; and probably in many instances we ought to pause before recommending this operation to young or unmarried women on this very account. He knew that reflex irritation from the male sexual organs produced strange phenomena, and the late Dr. Van Buren had attributed many of the nervous conditions and perturbations of men to ungratified sexual desire. There could be no question about it, that this ungratified sexual appetite created a most unfortunate series of phenomena in both sexes, and more particularly in the female than in the male; consequently it must always be estimated in considering such a serious operation as Battey's or Tait's. The modesty and native secretiveness of women would rarely assist us in such cases by a direct avowal or confession, and we ought in all cases to use every effort to determine the exact psychological state of unmarried women who were willing to submit to the severest surgical alternative that can be presented to them for a relief from pelvic pain or distress.

Dr. MUNDÉ remarked that, since in Dr. Gillette's case the patient recovered after marriage without treatment, it was an indication that the condition calling for Tait's operation did not exist.

Dr. GILLETTE remarked that he did not make a positive diagnosis of salpingitis; he simply stated that there were all the subjective symptoms of that condition. He should agree with Dr. Mundé that, if with these subjective symptoms enlargement of the tubes could be recognized with certainty, Tait's operation should be performed as soon as the patient's consent could be obtained.

Dr. LEE thought that, in justice to Mr. Tait, it should be said he did not advocate the removal of the tubes or of the ovaries in cases simply of a neuralgic or hysterical character: that his advice to do the operation was restricted to cases in which a physical change in the structure of the tubes could be recognized on examination. In such cases greater benefit had been derived from laparotomy than from any other means, and he resorted to the operation boldly. On the other hand, Dr. Battey, he believed, removed the ovaries largely for dysmenorrhea, without reference to structural change or enlargement, and he did not doubt that it was to the too great tendency which had been shown by some to resort to Battey's operation in cases of neuralgia of an hysterical character, and not to Tait's operation, which was applicable to cases in which a structural change could be recognized, that exception had been taken. He recalled a case in which an operation for removal of the ovaries was done in the case of a patient suffering from pelvic pains and hysterical symptoms, and after the operation, although the pelvic pains ceased entirely, the mental symptoms at once became worse, and finally the patient had to be sent to an asylum for the insane.

FIBROID TUMOR OF THE UTERUS REMOVED BY THE GALVANIC  
CAUTERY AND BY ENUCLEATION.

Dr. BACHE McE. EMMET presented the specimen. The patient from whom it was removed had suffered from hemorrhage and partial inversion of the uterus. Before the operation, however, the organ resumed its natural position spontaneously. After some days of preparatory treatment, with the assistance of Dr. Dawson, the galvanic cautery wire was placed around the tumor as high up as possible, and the capsule was cut through. An attempt was then made to apply the wire still higher, and, while doing so, traction was made, as indeed it had been throughout, and the tumor unexpectedly became enucleated and was removed entire. This excellent result, although accidental, Dr. Emmet believed could not have been obtained as conveniently by the use of the scissors. Enucleation was far more advantageous than excision, inasmuch as there was less danger of its being followed by hemorrhage, septicemia, or a return of the growth.

Dr. B. F. DAWSON thought that in this case the accidental result following traction upon the tumor after division of its capsule by the galvanic cautery wire suggested a method of operating which could be adopted in the future in similar cases. With regard to Dr. Lee's statement that he had found Thomas's scoop an excellent instrument with which to divide the capsule, the galvanic cautery wire possessed the advantage of leaving a charred surface from which hemorrhage and septic absorption were less liable to take place, and of leaving less of the capsule behind.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

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*Meeting, Wednesday, July 4th, 1883.*

Dr. GERVIS, *President, in the Chair.*

### HEMORRHAGE INTO AN OVARIAN CYST.

Dr. ROBERT BARNES exhibited a specimen of hemorrhagic effusion into an ovarian cyst and the corresponding Fallopian tube.

### MODES OF SEPARATION AND EXPULSION OF PLACENTA.

Dr. CHAMPNEYS showed two experimental demonstrations which he had used in lecturing since 1882, to illustrate—1. The mode of separation of placenta (*a*) by contraction of placental site, as in ordinary labor, and (*b*) by expansion of placental site, as in placenta previa; and 2. To illustrate the mechanical advantage of the edgewise presentation of the placenta.

### OVARIAN AND UTERINE TUMORS.

Mr. KNOWSLEY THORNTON showed a soft uterine growth and an

ovarian tumor removed from a patient aged fifty-six. The nature of the growth he hoped to report on at a subsequent meeting. He also showed an ovarian cyst highly congested from twisting of the pedicle which had been removed during acute peritonitis. He thought that in the specimen shown by Dr. Robert Barnes the hemorrhage was probably the effect of twisting of the pedicle.

MR. LAWSON TAIT agreed with Mr. Thornton as to Dr. Barnes' specimen. Such twisting mostly occurred in tumors growing from the right side, and depended on the action of the rectum.

#### FIBRINOUS POLYPUS.

MR. W. S. A. GRIFFITH showed a uterus containing a fibrinous polypus four inches long, formed of organized adherent blood-clot. There was no reason to think that recent pregnancy had occurred. The patient died from the bursting of a perinephritic abscess.

#### THE OBSTETRICS OF THE KYPHOTIC PELVIS.

By DR. CHAMPNEYS.—An analysis was given of thirty-two labors in twenty women, including three labors in a patient of the author's, the last labor having been carefully observed. An analysis and a table were given, stating the presentation, change during labor, measurements of fetal skull and pelvis, operative measures, moulding of fetal skull, result to child and mother. The general remarks of other writers on the subject were summarized. The general conclusions at which the author arrived were the following: That vertex presentations, and especially right occipito-iliac positions, are unusually frequent; deep transverse position is common; posterior rotation not uncommon. The comparative frequency of occipito-posterior positions is probably due (as explained by Hoening) to the obstacle to forward rotation in third positions, which are very common. The head sometimes emerges from the ligamentous pelvis transverse, or nearly so, and entirely posterior to the tubera ischii. The analogy to the "extra-median" position was pointed out. The well-known looseness of the pelvic joints in this pelvis probably assisted this by the nutation of the sacrum. Spontaneous premature labor is not uncommon. The immediate fetal mortality in the published cases was 40.6 per cent, the maternal 28.1 per cent; but the author thought this estimate probably too high, as slight cases were not recorded. The conclusions as to treatment and prognosis were: 1. In a first labor, if the head present, wait, and act according to circumstances. This implies forceps, craniotomy, or Cesarean section, which should always be considered in the above order. 2. If the head present, never turn. 3. In subsequent labors, where the history of the first labor seems to indicate it, premature labor may be induced with good hope. 4. No known measurements give us any sure indication for forceps, turning, Cesarean section, or the date for induction of premature labor. 5. The mobility of the pelvic joints implies a prognosis always more favorable than measurements would lead us to suppose. 6. Probably in many cases the head entirely neglects the



anterior half of the pelvic outlet, and emerges from it transverse, or at most oblique, antero-posterior emergence being the exception. 7. Each succeeding difficult labor increases the liability of the uterus to rupture, as in other forms of pelvic distortion.

DR. ROPER remarked that the mechanism described by Dr. Champneys resembled that of labor in the lower animals, in which there was no pelvic arch, and the fetus always passed behind the ischial tuberosities. This diminution of curve in the pelvic axis somewhat lessened the difficulty of labor. In cases of kyphosis the vertical capacity of the abdomen was diminished, hence the uterus was thrust forward and pendulous belly was common, and led to difficulty in the entry of the fetus into the brim. He described a case which he had seen. In these cases the deformity of the outlet obstructed delivery more than that at the brim.

DR. HERMAN agreed with the author that the published cases probably contained an undue proportion of difficult cases.

DR. CHAMPNEYS thought that pendulous belly was produced by anything which shortened the abdominal cavity.

#### A NOTE ON UTERINE MYOMA: ITS PATHOLOGY AND TREATMENT.

By MR. LAWSON TAIT.—The author thought that the word "myoma" should entirely supersede the incorrect term, "uterine fibroid." The growth of ordinary myoma was limited to the period of sexual activity, was influenced by the menstrual function, and probably its ultimate cause would be found in some disturbance of the nervous body which governed that function. The presence of a myoma indefinitely delayed the menopause. Menstruation and ovulation, he thought, were completely independent functions, having perhaps a community of purpose. Removal of the ovaries often did not affect menstruation, but removal of the tubes nearly always did so. But in one case in which he had removed both ovaries, tubes, and part of the fundus uteri, menstruation continued for more than a year. He deprecated the triple subdivision of myomata into submucous, intramural, and subperitoneal. For pathological and surgical purposes, he proposed a new subdivision into the nodular and the concentric. The latter consisted of a uniform hypertrophy of the muscular tissue of the uterus, in the midst of which the canal lay centrally; the tissue of this form was loose, and usually very edematous. Of the nodular myoma, he proposed two subvarieties, the simple and the multinodular. He believed that each nodule was seated on a central arterial twig, and that its growth was endogenous, the older tissue being on the outside. The dependence of such growth on menstruation was proved by the fact that arrest of menstruation arrested the growth, or even caused the complete disappearance of such tumors. This had been in several cases brought about by the removal of the tubes only. He had treated fifty-four cases of uterine myoma by removal of the uterine appendages, with three deaths—a mortality of 5.5 per cent—a striking contrast to the results of hysterectomy. Of these fifty-one, in thirty-eight the

results had been carefully followed, and were everything that was to be desired. In three the tumors were, or became, malignant. In three others the tumors continued to grow, although menstruation had been arrested. The author suspected that these were either fibro-cystic or myoma of the concentric variety, in neither of which forms was the removal of the uterine appendages useful.

THE PRESIDENT was hardly prepared to accept Mr. Tait's classification; but it was not necessarily antagonistic to the one in common use. He agreed with Mr. Tait as to the delay in the menopause in these cases. He would like further evidence as to the sole or even large influence of the tubes in the phenomena of menstruation.

DR. HERMAN had published a case in which the symptoms of a fibroid polypus first appeared sixteen years after the menopause. The history of patients after operations like those of Mr. Tait was of great importance, for patients not benefited often did not return to the operator, and he therefore was apt to get a too favorable impression of the results.

DR. DEWAR asked if Mr. Tait was careful to tie the uterine artery, and whether removal of the tubes, leaving behind the ovaries, was not dangerous. He had seen one case in which the uterine appendages had been removed, and hysterectomy was subsequently required on account of hemorrhage.

DR. MEADOWS preferred the present classification of fibroid growths to that suggested by Mr. Tait as being founded on clinical characters, and of great practical value for diagnosis and treatment. He believed that the ovaries, and not the tubes, were the prime movers in menstruation. In one case, he had removed the ovaries and left the tubes, and menstruation ceased. He thought there were many exceptions to the rule that uterine fibromata ceased to grow after the menopause. Notwithstanding the high rate of mortality which attended hysterectomy, he preferred it to removal of the ovaries.

MR. LAWSON TAIT said that cases of growth of apparent uterine myomata after the menopause needed most careful examination. Occasionally removal of the ovaries arrested menstruation, but this was the exception. He had never knowingly tied the uterine artery, and it would be very difficult to do so.

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## REVIEWS.

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CLINICAL LECTURES ON THE DISEASES OF WOMEN, delivered in St. Bartholomew's Hospital, by J. MATTHEWS DUNCAN, M.D., LL.D., F.R.S.E., etc. Second edition, much enlarged, with appendices. London: J. & A. Churchill, 1883. Pp. 434.

Dr. Duncan's reputation would lead us to expect something better from his pen than these clinical lectures. The information contained

in many of them might to advantage have been condensed into half the space, and thus those who are inclined to read his book would have been spared much physical weariness and mental vexation. The diseases considered cover a wide field. The lectures are thirty-five in number, followed by an appendix containing seven chapters. To endeavor to critically analyze each lecture would carry us too far, and likely enough strike the key-note of nothing markedly original. What special purpose the work can subserve it is hard to say. If its object be to give a vivid portraiture of many of the affections common to woman, it fails to do so; if it is the author's intention to convey the main facts in regard to diagnosis and treatment, he must re-write his book. These faults are, it is true, due to the author's method, for in his preface he says, "the lectures do not aspire to completeness, being clinical, not systematic. Whole departments are omitted; and in regard to such subjects as are considered, there is not even that kind of completeness which should characterize a lecture." The work, then, is complete according to the author's intention, which, it must be said, is far from a good one.

Chronic catarrh of the cervix is usually held to be a most intractable affection; not so, evidently in Duncan's hands. In ordinary cases, he tells us, about ten applications of the lunar caustic should cure the case, or else it is not amenable to treatment. The remedy *par excellence*, however, is the stick of zinc-alum which Sköldberg, of Stockholm, introduced to Duncan's notice. It is composed of equal parts of zinc and alum fused together, a stick about the size of a No. 7 bougie is introduced into the cervix and left there. "This caustic has the advantage of requiring generally only one application." It is a remedy, hence, which should commend itself to those specialists here who, after busying themselves for months with curette, iodine, nitric and carbolic acids, etc., are satisfied if they effect what often proves to be but a transient cure. Dr. Duncan is certainly to be congratulated on his results, particularly since it is apparently unnecessary for him to recognize the fact that in many cases a laceration of the cervix is at the bottom of the chronic cervical catarrh.

Duncan's explanation of retention of mucus in the cervix is rather curious. Aside from atresia (congenital or acquired), and stricture of the internal os, a condition unknown to him, he calls into play a force to which the name "adspiratory" is given. The cause of this force is the negative pressure in the abdomen. In its action it causes "a sudden and great increase of the retentive power of the abdomen. This "adspiratory" force will explain, according to Duncan, cases of impregnation without penetration. It causes, as it were, the uterus to suck up the spermatozoa. If these little creatures possessed no motion, it might be necessary to suppose a force of this kind; but as it is well known that the spermatozoon has little difficulty in effecting entrance through any opening however minute, it seems a pity to insist that a *vis a fronte* brings him in contact with the ovum, instead of his own sweet will. This digression, however, has led us from retention of mucus. "A gentle and constantly acting adspiratory or retentive force" is necessary to the retention of mucus. Unfortunately for this theory, the uterus is not a rubber bag, but a solid muscular body. If it were a bag, it would be easy to admit that an "adspiratory" force could have an effect on it; hardly to such an extent when we consider



the structure of the uterus. Nor is it necessary to go wool-gathering after adspiratory forces to explain retention of mucus. There is a far simpler force called adhesion, by means of which a sticky body like mucus will retain its position wherever placed. As an instance of lack of "adspiratory" force, Duncan refers to those women whose vaginæ do not retain semen. In such cases a more rational explanation is the shortness of the vaginal cul-de-sacs—the *receptacula seminis*—or else absence of the perineum.

Dr. Duncan classifies dysmenorrhea as inflammatory and spasmodic; an obstructive form he does not recognize. Spasmodic dysmenorrhea is a pure neurosis. On examination neither version nor flexion will usually be found. The seat of the disease is at the internal os, on touching which the patient experiences pains similar to those she suffers just before menstruation. This described condition corresponds very closely to the neuralgic dysmenorrhea of many authors. Duncan, however, fails to prove his point that there is no obstruction at the internal os. In such cases of dysmenorrhea it is well known that the simple passage of the uterine sound just before the expected period will often ward off the pains. But, granting the correctness of his assumption, is not the treatment he employs in favor of the supposition that there is obstruction? The surgeon passes sounds along the urethra and down the esophagus in cases of stricture. Duncan does the same by the cervical canal to cure this spasmodic dysmenorrhea. May not this sounding remove an obstruction at the internal os or elsewhere in the canal as well as subdue spasm? Duncan's statement, too, that a "pin-point os uteri is quite enough to allow a hundred times as much blood to pass as there is any occasion for, or as offers to pass," is doubtless true for some cases, but in many more it is with-in the experience of most gynecologists that patients with this kind of os suffer from difficult menstruation, and can be relieved most effectually by enlarging the canal, preferably by incision. It is sound logic to argue that here at least the cause of the pains is obstruction to the flow, and until Duncan can explain such cases more satisfactorily, we must continue to believe in a dysmenorrhea dependent on obstruction. There is not much reason to doubt either that in extreme flexions we have a cause of dysmenorrhea—those for instance where it is an exceedingly difficult matter to introduce a sound or probe. Opposition to entrance would seem to imply opposition to exit. This whole subject, however, is so far from settled that no one, not even Dr. Duncan, can be allowed to dogmatize.

The lectures on inflammations of the pudendum, cysts and tumors of the vagina and pudendum, and on ovaritis, are good ones—of the nature of refreshing oases in the book. Under treatment of inveterate cases of ovaritis, the author might well to-day be a trifle more sanguine. "In many cases which resist a properly conducted treatment," his advice is to desist from further attempts at cure. The operation of spaying "is still *sub judice*. Most gynecologists say that it is condemned already, but upon it I reserve my opinion. Only I may say that I anticipate that the danger of it will always be out of proportion to the gravity of the disease." It is indeed too early to express a decided opinion in favor of removal of the ovaries, but in the light of recent successes, notably those of Tait, we can at least say that the operation is justifiable, and that the risk run is slight compared to the chances of relief should the operation prove a success.

In lecture XXIV. we have an affection which, so far as we know, is peculiar to Dr. Duncan's nosology. It bears the name of "aching kidney." The pages considering it are good examples of how far theory will carry a man towards making an obscure diagnosis. To note a few of the diagnostic points: "One or other kidney is the seat of pain. It is not a neuralgic pain; it is a heavy wearying pain, deep in the side. It is in the region of the kidney, and in many cases (as I shall presently tell you), you can easily identify it as being in the kidney itself; . . . the left kidney is more frequently the seat of disease. . . . Swelling of the kidney or the suet, or of both, is not rarely to be made out." The condition would seem to be not infrequent in England. It is time, perhaps, it were determined here as well.

Dr. Duncan's views on the subject of displacements are of sufficient interest to demand reference here. He is obviously afraid of being carried along in the current of what he terms the prevailing displacement theory, and so, as is ordinarily the case, goes far to the other extreme. He holds that no displacement of itself causes symptoms. Symptoms when they arise are due to the complications attending the displacement—that is to say, congestion and inflammation of the uterus or the neighboring organs. This opinion is strictly in accord with that held by other eminent men. When, however, he comes to the subject of treatment, he isolates himself completely from these eminent men. That pessaries are abused we grant; that the majority of those figured in our textbooks are utterly useless for good and too often means of ill, is also granted, but a protest must be entered against such sweeping generalizations as that "they are always harborers of dirt, and they always keep the mind watching the part; they are all liable to decay, and require, if long used, to be renewed. They all are undesirable additions to the contents of the pelvic excavation, and, if they are efficient must, of course, cause more pressure than that caused by the organ or organs which they keep in altered position, though perhaps on altered parts." It would be a waste of time to refute the obvious fallacies in this quotation.

In speaking of procidentia, Duncan lays far too much stress on the importance of negative pressure in the abdomen in keeping the uterus in position. He robs the so-called ligaments of the uterus of all retentive power, their object, according to him, being to give the uterus unlimited motion. They are not ligaments, for the curious reason that, if they were, "they would prevent the womb from moving." Why any more so than the ligaments of the hip or knee prevent them from moving? It is more rational to consider their purpose as being to prevent excesses of motion, as analogically ligaments in other parts of the body do. Neither does Duncan believe that perineal rupture is a factor in descensus. Yet how frequently, as a result of rupture of the perineum, do we find a subinvolved state of both vaginal walls, followed by a sagging of one or other at the vulvar outlet, then a retroverted uterus, and finally a prolapse. The operation for restoration of the perineum, too, will not infrequently cause the uterus to return to its position, particularly in those cases where a marked degree of areolar hyperplasia does not exist. Whence it is but fair to conclude that the perineal body does in a measure act as a support to the uterus, and that often its absence is a factor in the production of descensus.

The appendix is devoted to various topics of interest. To mention them only: Open Fallopian tube and cervix uteri; spontaneous di-

lation of the virgin uterus, with hemorrhage; intrauterine menstrual coagula; intrauterine puerperal coagula; fetid parametric and perimetric abscess; two cases of nerve lesion in gynecology; the morbid anatomy of Douglas' pouch.

Whilst many of the opinions enunciated in this work are open to criticism, it by no means follows that it is entirely devoid of good. Much sound advice may be derived from it if the reader has patience to read it carefully. For reasons already given, however, the work must fail to suit the student, who is not satisfied with a superficial and incomplete knowledge, but is desirous of knowing well the art he proposes to practise.

E. H. GRANDIN.

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TRAITÉ PRATIQUE DES ACCOUCHEMENTS, par le Dr. A. CHARPENTIER, Professeur Agrégé à la Faculté de Médecine de Paris, etc. Paris, Librairie, J. B. Baillière et Fils. 1883.

A PRACTICAL TREATISE ON OBSTETRICS, by DR. A. CHARPENTIER. Two Volumes, pp. 2,015.

"During the past twenty-five years, researches in obstetrics, published both in France and abroad, have increased to such an extent that our classical treatises have become really inefficient, and, one may without exaggeration say that they are no longer on a par with the modern art." Such is Charpentier's apology for offering a new work on the subject to the profession. His qualifications for the work are that for twelve years he has been connected in varying capacities with the Obstetrical Clinic of the Faculty at Paris and that his familiarity with both the German and English languages has enabled him to keep abreast of the literature of these countries. He has set himself, hence, the task of giving in these volumes an impartial account of the science of obstetrics as it exists to-day. The undertaking was a vast one, and that he has succeeded fairly well is high praise, for, whilst the ground work of obstetrics may be said to be the same in all countries, there are special differences in practice which are favored more in one place than another, and these must needs bias to an extent every one, however fair-minded he desires to be. Charpentier's work, however, is singularly free from any bias, and in consequence represents almost always advanced opinion. The arrangement of the work is a good one, the subjects following one another in natural sequence. To show the plan of the work, the two volumes are subdivided into eight books as follows: 1st, Anatomy; 2d, Physiology; 3d, Pregnancy; 4th, The Physiology of Labor; 5th, The Pathology of Pregnancy; 6th, The Pathology of Labor; 7th, Obstetrical Operations; 8th, The Pathology of the Puerperium. A detailed criticism of such a comprehensive work is obviously impossible, nor, indeed, is one necessary; for, whilst much of the contents is personal, in great part it consists in a résumé of the well-known labors of others, with such deductions as seem sound to Charpentier. Here and there, however, practices are inculcated which are not on a level with the best, whilst again, in other cases, it is gratifying to find the author boldly pronounce in favor of methods which, though by no means uniformly accepted, logically ought to be. To mention a striking instance, the difference of opinion as to the proper limits of usefulness of ergot is well known, and yet it is in vain to search through ordinary text-books for any cardinal rule. Charpentier, in accord with Pajot, lays down a stringent one: "Never use ergot till both child and placenta are in the world." This is a simple rule and a good one. And yet, few



practitioners follow it. They give ergot for uterine inertia, in ignorance of the fact that what the uterus really often needs is rest; they give ergot to increase the force of the pains, often neglecting to see if an incarcerated anterior lip, for instance, is not at the bottom of the feeble pains, and again often without having any special knowledge of the capacity of the pelvis; they give ergot, too, to hasten the third stage of labor, not infrequently defeating the very end in view, and obtaining an incarcerated placenta. If rupture of the uterus is not frequently reported from the abuse of this drug, who is in a position to deny that many a child's life has not been sacrificed to its use, as, *a priori*, we should expect? In the second volume, a special chapter is devoted to a study of ergot, and the author formulates the reasons why he never uses the drug till the uterus has been emptied. These reasons are not specially new, but they deserve emphasis, and are in brief: ergot is dangerous for the fetus, on account of the tetanoid state into which it tends to throw the uterus, thus interfering with the uteroplacental circulation and rendering the manual or instrumental extraction of the fetus impossible, in case it should become necessary. Since ergot acts as well on one portion of the uterus as on another, it may cause contraction of the cervix, thus defeating the object desired, dilatation. Its use may lead to rupture of the uterus and retention of the after-birth. It is useless in placenta previa, compared to the value of the tampon.

Whilst agreeing perfectly with the author in regard to ergot, it is far otherwise when we come to the question of the management of the third stage of labor. Cr  d  's method of placental expression finds no favor with him. His objections are that, in the first place the method as described by Cr  d   is inapplicable, and, in the second place, tends to injure the patient. The answer to these objections is, that, if Charpentier has ever tried the method properly, he must be convinced that his first objection cannot hold, and that, so far from injuring the patient, it is one of the most effective means of obtaining that great desideratum, firm and efficient contraction. It is a trifle like begging the question to say that placental expression may give rise to metritis or peritonitis. After labor, there are many factors present which may cause both the above complications, and so in any given case it is scarcely fair to charge a most efficient method with sins which more likely belong elsewhere. What does Charpentier give us in place of placental expression? He waits till the placenta detaches itself, occasionally *pulling on the cord* to satisfy himself as to the condition of the placenta. On page 462, vol. I., that bane of obstetrical woodcuts appears which teaches how to deliver the placenta by traction on the cord. Charpentier may never have seen an inverted uterus follow his traction; others have, and therefore substitute a safer method. The above is an instance wherein the work cannot be said to represent fairly the methods of our most advanced teachers. We will see further on what method is advised, in case the placenta cannot be pulled out, should the tractions fail to deliver the uterus as well.

On page 486, Vol. I., the advice is given to place the new-born infant in winter in its cradle, cover its head as well as its body, and surround it with warm water bottles. If in France, where, owing to the primitive methods of heating houses, an even temperature cannot be obtained, this practice seems desirable; elsewhere, the better rule is to accustom the child from the outset to

its new surroundings and, whilst clothing it sufficiently, avoid unnecessary articles, and, above all, let it breathe purer air than can reach it through any coverlet thrown over its head. The method advised must inevitably tend to render the infant delicate. A roborant treatment, within judicious limits, suggests itself as better.

The subject of abortion and its proper management is of great interest, and well presented by Charpentier. After reviewing carefully the practice of accoucheurs in different countries, he formulates his own views as follows: Tampon the vagina till the cervix is sufficiently dilated. After the birth of the fetus, if the placenta does not follow, what is to be done? "Generally nothing; nature will take care of it: the placenta may remain seven, eight, fifteen days before coming out, . . . etc." "If the placenta is at the fundus and still adherent . . . what is to be done? Still wait. . . . If there is hemorrhage? The tampon and ergot. If putrefaction of the placenta occurs? Extract as soon as possible whatever remains in the uterus." (Vol. I., p. 1011.) A subject intimately associated with the above is the method to pursue where at term the placenta is adherent. It is convenient, therefore, to consider it here. The counsel given is (Vol. II., pp. 408 and 409): Introduce the hand into the uterus and carefully detach it. If it be impossible to remove all, it is better to leave a portion than, through forcible efforts, to run the risk of uterine rupture. "Having in a certain number of cases tried curettes, ovum forceps, etc., we have given them up, and limit our interference to intra-uterine injections twice each day, associated with vaginal injections to the number of eight or ten every twenty-four hours." It is not too strong language to characterize this *laissez aller* method of dealing with the ovum of an abortion or adherent particles of placenta at full term as most pernicious. This is said, though well aware that the practice here outlined is a very common one, and not always followed by evil results. There are some women who can survive any amount of mismanagement. The large proportion of lying-in women, however, cannot be considered as out of danger till every particle of retained placenta or secundine is out of the uterus. Decomposition once set in, it is but a step towards septicemia with its concurrent evils, the worst of which is not always death. There should be but one rule after a miscarriage or when brought face to face with an adherent placenta, and that is, *never temporize*, but remove every trace from the uterus as soon as satisfied, within a few hours, that the uterus cannot accomplish it for herself. If this be "meddlesome midwifery," it is certainly preferable to subjecting a woman to the risk of septicemia through an over-conservatism. To accomplish the end in view, the finger is the best instrument because it is sentient, but where, for obvious reasons, it fails or cannot be employed, we have in the dull curette and placental forceps most excellent instruments, which, if used with the care which should characterize every obstetric operation, cannot injure the uterus—certainly no case of uterine rupture from their skilful use has been reported. The uterine cavity once emptied, and a thorough uterine douche administered, the accoucheur may leave his patient with a mind freer from care than if he knows there is present in the uterus a possible focus of septic poisoning.

On page 219 and following (Vol. II.), the question of the treatment of laceration of the perineum is considered. Dr. Charpen-

tier, in opposition to what he admits is customary in France, is opposed to the immediate repair. His practice is, where the sphincter is not involved, to place compresses, wet in a one-per-cent solution of carbolic acid, over the wound, and to tie the legs together. It is the rule for the greater number of the lacerations to heal by first intention. He has given up the use of *serres-fines* and sutures, because he has found them painful to the woman, almost invariably tearing out, and occasionally causing gangrene. Where, however, the sphincter is involved, cure by this method is impossible. He prefers to defer the operation till the fifth or sixth month after labor, because by that time the genital organs have returned to their normal state, and it is advantageous to operate after involution is completed. Charpentier is not alone in these opinions; but they cannot be considered correct. The best time for performing the operation is immediately after labor, except where the woman is in imminent danger of hemorrhage, or is in a state of great exhaustion from protracted labor. Barring these exceptions, the operation can be performed without inflicting extra pain on the woman; the sutures are no more likely to break loose than at a later date; the closing of the wound shuts one possible channel of septic infection, and at the same time removes one hindrance to perfect vaginal and uterine involution. A large laceration, particularly one through the sphincter, is a bar to involution, so that at the end of six months the operation is a still more formidable one, owing to the subinvolution of the vagina, which is a constant accompaniment of lacerated perineum. Here again, then, Charpentier has not ranged himself on the side of advanced practice.

Book VII., which deals with operative obstetrics, is exhaustive in detail and written in a masterly manner. Almost every instrument ever invented is figured, the majority being, of course, more of the nature of curiosities than possessing any actual usefulness. The author is not as enthusiastic an admirer of Tarnier's forceps as is the majority of the younger French school. Whilst granting its usefulness when the head is in the excavation, he fails to find it superior to the ordinary high forceps when the head is at the superior strait; for Tarnier's forceps lacks the perineal curve as well as the classical forceps, as he terms it, and hence it is just as difficult to carry the one far enough back as it is the other. The most forcible objection, however, is that with this forceps the accoucheur has less positive knowledge of the progress made by the fetal head, and cannot control his tractions as well. Another objection is, that in posterior positions the movement of rotation does not take place as readily as when the classical forceps is in use.

On page 756 (vol. ii.) is the only reference to gastro-elytrotomy. It is early yet to predict what future is in store for this operation, but the results so far obtained are sufficiently good to claim for it more extended reference than is found here. Charpentier contents himself with the statement that, notwithstanding the favorable results obtained in America, the operation has not been accepted in France, where the classical Cesarean section is preferred. At the time the author wrote the chapter, the operation had been performed six times with four deaths. Since, it has been performed eight times with the result of four recoveries for the mother, and all the children but two, these being dead before the operation. These statistics are taken from an article in a recent number of this JOURNAL, and its author, Dr. Garrigues, amongst



his conclusions, states that "Porro's operation has given less good results, and Müller's no better than Thomas'." Under such circumstances, an author of a work intended to fill a void in obstetrical literature, seems called on to give gastro-elytrotomy more notice than can be contained in a dozen lines.

"Porro's operation, like the Cesarean section, should be reserved for cases of absolute necessity, and whenever one has the choice between this operation and any other, the last should be preferred to the first." It is pointed out, with truth, that there is great difficulty in determining the exact value of Porro's operation when compared with others, for the reason that "if all the Porro cases have been published, the same does not hold true of the Cesarean section, nor of cephalotripsy." From numerous statistics, the results, as given here, are a mortality of from 53% to 56% for Porro's operation, and of 54% to 60% for the Cesarean section.

Being a follower of Pajot in many respects, we should expect to find Charpentier a partisan of the cephalotribe, and so he is in a measure, even though he recognizes clearly the disadvantages of this instrument. The form of instrument he recommends, however, that of Bailly, cannot be used where Braun's cranioclast will may. Therefore, the advice he gives, in certain cases to use the cephalotribe, may well be disregarded by those who care to use but one instrument, and that Braun's cranioclast. It will be of service wherever Bailly's can, and where the latter cannot be used the former still proves effective. The limit of Bailly's instrument is at 6½ centimetres. Up to this point, then, Charpentier prefers the cephalotribe; below it, the cranioclast. The instrument recommended by him is figured on page 798 (vol. ii.).

In the treatment of puerperal septicemia, Charpentier is in the front rank in regard to antiseptic intrauterine injections. A criticism called for is, that he does not always give them when the lochia become fetid. Ordinarily, in such a case, he simply increases the daily number of vaginal injections. It is only in cases of retained placenta, and especially after an abortion, that he orders the intrauterine douche from the outset. A safer rule is to give the douche frequently in any case, as soon as the lochia become at all fetid.

The criticisms drawn out from a survey of this work may seem numerous, but it must be remembered that the volumes are large ones, and that the faulty is far outweighed by the good. The work is profusely illustrated. It deserves a cordial reception at home, and in this country will answer well for a book of reference to all who are familiar with the French language.

E. H. GRANDIN.

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TRANSFUSION. By CHAS. EGERTON JENNINGS, L.R.C.P. London, etc. With engravings illustrating the author's siphon for intra-venous injection and immediate transfusion, and a bibliographical index. London: Baillière, Tindall & Cox, 1883, pp. 69.

This modest brochure endeavors to point out the cases in which transfusion would be of temporary benefit; those in which it would be obligatory upon the practitioner, and would usually be successful when properly performed; also the fallacies and dangers of the operation, and the means of obviating them. It is written in a very engaging style, and delineates graphically the well-known dangers of the operation. The application will be most frequent in obstetric cases. The following passage is noteworthy: "As a rule, blood-transfusion should be dispensed with, and an artificial

substitute found. All complex instruments must be abandoned, and a method devoid of danger and of easy application employed." He tells us that transfusion was attempted as early as 1492 upon Pope Innocent VIII., but without success. An instrument for transfusion, on the principle of a Davidson's syringe, is described as having been presented to one of the learned societies of Paris in 1658 by a Benedictine monk, Robert des Gabets, the instrument having been made by one Eloy Pichat, a friar, in 1651. This instrument, as well as others, was frequently used in successful transfusion upon dogs. Both the English and the French transfused successfully from animals to man in this (17th) century, the conclusions being, that while a small quantity might be helpful, a large quantity of foreign corpuscles would be fatal. He reports two hundred and forty-three cases of transfusion prior to 1873, of which one hundred and forty-three were followed by good results. The general principles in regard to the operation are: 1. The direct method is applicable in only a few cases, and only at the hands of skilled surgeons, with skilled assistants. 2. The operation is most successful in cases of severe hemorrhage, unaccompanied by shock, in which the bleeding can be checked. 3. There can be no benefit in cases which are accompanied by shock. 4. The operation is useless in cases in which hemorrhages are frequent, unless the cause be removable. Causes of failure are: 1. Entrance of air. 2. Coagulation of the injected blood. 3. Introduction of injurious fluids. 4. Difficulty of the operation. The author recommends as necessary conditions in a syringe, a canula with an extremity which tapers to a point, and with a point which is not sharp enough to perforate the vein in which it is placed. The canula should also have a roughened outer surface, to prevent the fingers from slipping, a serpentine form, for greater ease of introduction and security of retention, and an aperture for the exit of the blood, which is at some distance from the point. The canula should be *plugged on* (not screwed) to a tube with siphon action, which has been secured against the introduction of foreign matter. The formula for the saline solution, which is preferable to blood, is as follows: Sod. chlor., gr. l.; potass. chlor., gr. ij.; sod. sulph. gr., iiss.; sod. carb., gr. iiss.; sod. phosph., gr. ij.; aquæ,  $\bar{\text{z}}$  xx. (at 100° F.); alcohol,  $\bar{\text{z}}$  ij. It is the dynamic force of the injected fluid, rather than the nutritive, which is of value.

AND. F. CURRIER.

ESSAI SUR LES HÉMATOCELES UTÉRINES INTRAPÉRITONEALES. Par DR. M. JOUSSET. Paris, 1883, J. B. Baillière et fils, pp. 176.

In accordance with Huguier's arrangement, the author divides hematocele into intra- and extraperitoneal, the former alone being discussed in this essay, as the latter is quite rare. Two varieties are mentioned; in the first there are sudden sharp pain, with symptoms of internal hemorrhage and acute peritonitis. Encysting of the effused blood is accompanied by limited peritonitis. In the second variety, there are symptoms of menstrual retention, and at a later menstrual period occur peritonitis, metrorrhagia, and hematocele; or more frequently a sub-acute pelvic peritonitis, followed by hematocele. Uterine hematocele may therefore be defined as an affection which is symptomatic of an intraperitoneal hemorrhage, whether from the genital organs or from the newly-formed vessels of a pelvic peritonitis. Anatomically, it is characterized by a sanguineous encysted tumor in the true pelvis, and

projecting into the abdomen. Symptomatically, there is a fluctuating tumor, which is usually retro-uterine, and may show modifications and augmentations in connection with menstruation. The hemorrhage may cause death at once, or after some time, the blood having become encysted. The walls of the cyst may become thick and hard, while its contents may be partly absorbed, the rest remaining in a thickened condition. The surrounding structures usually become incorporated in the tumor. If the blood be not absorbed, it is probably because the peritoneum has been thickened by an antecedent inflammation. Seven possible causes or sources of hematocele are suggested: 1. From rupture of the utero-ovarian plexus. 2. From rupture and apoplexy of the ovary—even from a ruptured Graafian follicle. 3. From rupture of a tube, with or without tubal pregnancy. 4. From rupture in extra-uterine pregnancy. 5. From tubal hemorrhage. 6. From reflux of blood from the uterus, through the tubes, and into the abdominal cavity, in cases of metorrhagia or retention of menstrual fluid. 7. From acute bloody sweating of the peritoneum. As to symptomatology, in the common form there is often trouble in urination—either pain, retention, or inability to retain it—also fever, pain, nausea, vomiting, and constipation. The hematocele terminates: *a.* By rapid resorption of the blood. *b.* By becoming chronic. *c.* By rupture. *d.* By spontaneous opening. *e.* By surgical interference. If it passes into a chronic state, the result may be a dysenteric condition, which the author calls *entérite glaireuse*, in which the rectum is inflamed, and there are frequent clear, transparent, colorless stools. This condition may last a long time, but is likely to be recovered from. Rupture of the cyst is always fatal after manifestations of peritonitis with perforation. If the tumor increases in size very rapidly, the author advises puncture, but lays down no certain rule or guide. The cyst may open into the vagina or rectum. An opening into the bladder is possible, but no reported cases have been found. If surgical means be taken to evacuate the cyst, renewed hemorrhage may follow. He is not at all clear or explicit upon this point. Another form of hematocele is styled *chronique d'emblée*, differing from the common form in the almost complete absence of general symptoms indicative of such a condition. For treatment in hematocele he advises rest, opium, ergot, food (all good, and all old and well-known). A fly-blister or leeching may be called for in some cases. As to washing out the cyst, skill is required, and it is not an altogether safe procedure. The author follows Bernutz and Goupil in being very conservative as to any operative interference. The following are his conclusions: 1. Hematocele is not a morbid entity, but a symptom which is almost always preceded by certain characteristic phenomena. 2. It is not advisable to puncture excepting when there is great danger of rupture into the abdominal cavity. Appended to his essay are the histories of twenty-seven cases, twenty-two of which were fatal. Surely such results are not very brilliant. The condition is one which has not received its due share of attention.

AND. F. CURRIER.



## ABSTRACTS.

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1. Franz Neugebauer (Warsaw): A Contribution to the Clinical Literature of the so-called Spondylo-listhetic Pelvis (*Arch. of Gyn.*, XXIX., 3).—The author informs us that the literature of this subject is comprised for the most part in the histories of the fifteen pelves of this

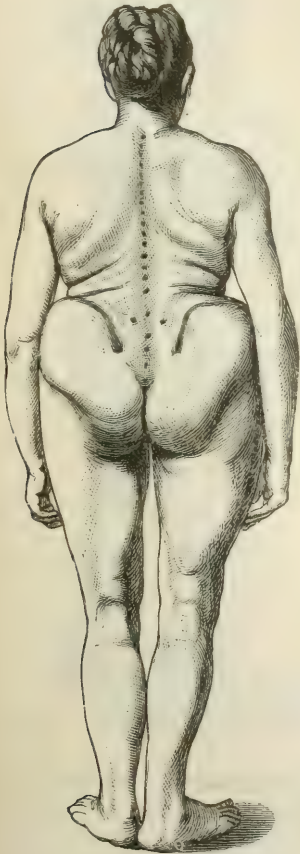


FIG. 1.



FIG. 2.

FIGS. 1 and 2.—Rear and side view of patient with external so-called kyphotic form of pelvis. Real spondylo-listhetic pelvis. IIpara.

variety which are deposited in various pathological museums. Common peculiarities in subjects of this deformity are, observing the sacral aspect, shortening of the body, and apparent lengthening of the lower extremi-

ties, a deep lumbo-dorsal ridge, apparent settling of the thorax into the false pelvis, great widening of the hips, and cordiform appearance of the buttocks. Both rear and lateral aspects of the accompanying figures 1 and 2 illustrate these peculiarities, although the type of the pelvis is the so-called kyphotic. In figures 4 and 6 the spondylo-listhetic pelvis is reproduced. Figure 7 gives an excellent front view of the deformity, which came on gradually after fatigue and exposure. The patient was twenty-six years of age at the time of the exposure (sleeping out of doors



FIG. 3.



FIG. 5.

FIGS. 3 and 5.—Woman with normal pelvis. Shown for sake of comparison. Rear and side views.

after a very fatiguing journey), supposed rheumatic symptoms appeared, and the deformity progressed during the next two years, until the condition shown in the picture was reached. [These points of history are interesting as bearing upon theories concerning causation.] Figure 8 represents a side (left) view of the Prague-Würzburg pelvis with sacro-lumbar spondylo-listhesis.

Concerning the cause of this deformity, the author has made careful investigations upon the fifteen historical pelvises already referred to, as well as upon some others, the history of which could not be ascertained. These investigations have led to the conclusion that the deformity is

acquired after birth, without the concurrence of a primary dyscrasic or inflammatory disease of the bones, certain predisposing conditions being present, especially such as have reference to 'increased weight of the body, *e. g.*, obesity, and repeated pregnancies. Its development is not necessarily limited to the sacro-lumbar junction of the vertebræ, nor does it depend particularly upon any age or race of the individual. It affects most commonly individuals of the hard-working classes, especially those who are often pregnant. The cause of the so-called spondylo-listhesis of

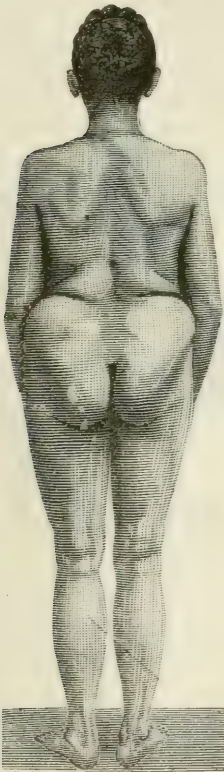


FIG. 4.

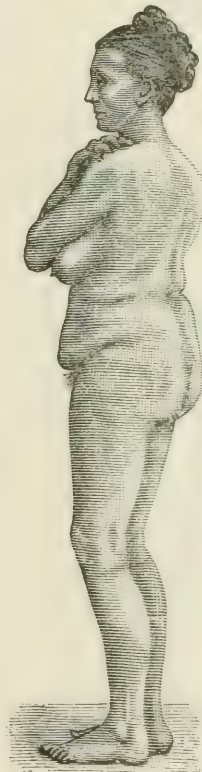


FIG. 6.

FIGS. 4 and 6.—Woman with spondylo-listhetic pelvis. Rear and side view. Vpara.

Kilian is a dislocation of the anterior half of the fifth lumbar vertebra, while the posterior half suffers only a relative change of position. The sacro-lumbar articulation is maintained in most cases; in only a few does synostosis occur, and in these the irritation has been considerable. The weight of the body has a tendency, as it presses upon the anterior half of the fifth lumbar vertebra, pushing it forward and downward, to bring it into a condition of olisthesis. This tendency to elongation in the inter-articular portions of both sides of the vertebra is always present, and its comprehension is a key to the understanding of the nature of the defor-



mity. In addition to elongation, there is also a process of bending, which is more or less pronounced as the process is more or less rapid. Fracture instead of bending has occurred in some cases. Adding to the conditions already mentioned that of vertical compression, the author proposes as a

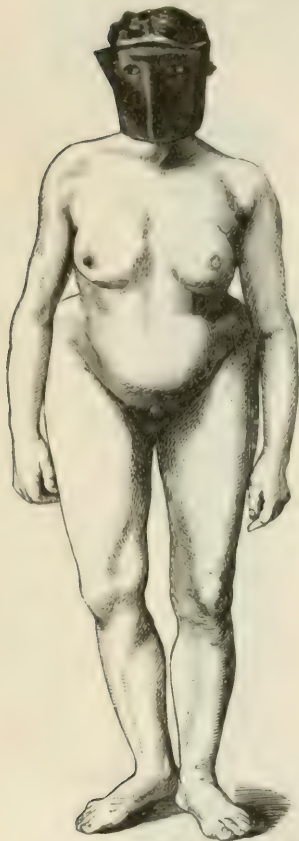


FIG. 7.

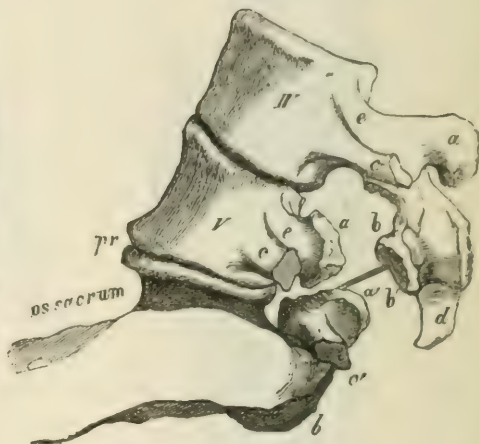


FIG. 8.

FIG. 7.—Front view of woman shown in Figs. 1. and 2.

FIG. 8.—Sacral spondylo-listhesis in the Prague-Würzburg pelvis. Left lateral view IV., Fourth lumbar vertebra. V., Fifth lumbar vertebra. *a*, Superior articular process. *b*, Inferior articular process. *c*, Transverse process. *d*, Spinous process. *e*, Root of arch. *a'*, Posterior flange of superior articular process of fifth lumbar vertebra. *c'*, Posterior flange of superior articular process of fifth lumbar vertebra. *b'*, Posterior articular surface of the inferior articular process of the fourth lumbar vertebra. (Both flanges of the superior articular process of the fifth lumbar vertebra, *a* and *a'*, were designated by Lambl as fifth and supernumerary sixth superior articular process, and the flanges of the transverse process, *c* and *c'*, as fifth and sixth transverse process.) *Pr.*, Promontory, with anterior prolongation of the superior anterior border of the first sacral vertebra.

For the sake of distinctness, the arch of the fourth lumbar vertebra is separated from that of the fifth by a peg of wood.

name for the entire complication, *dolicho-kyrto-platyspondylus*. Lambl's theory was that the deformity arose from a fetal hydrorrhachis; the author disproves this, and Lambl himself has abandoned the theory, excepting in certain cases. The author concludes that the elongation is due either to a separation of continuity of the inter-articular portion of the fifth lumbar vertebra, from whatever cause, or to the action of mechanical conditions which produce fracture of the superior articular process of the first sacral vertebra.

AND. F. CURRIER.

**2. Frommel: The Movements of the Uterus** (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—Experiments upon animals made as long ago as Harvey's time showed that it is the contractile force of the uterus, as a muscular organ, which expels the child. This observation has been verified upon the human subject in the labors of paralyzed women, also in some well-authenticated cases where the fetus has been born after the mother's death. Kehrér was the first to turn his attention to the peculiar movements of the genital canal at the time of parturition, his observations being published in 1863. He differentiated between progressive contractions, stationary stricture, and tetanus. As the result of experiments, he concluded that the amount of pressure in the vascular system, and not the quality of the contents of the vessels, determines the muscular movements; also that the centres of rhythmical contraction in the genital organs are in the brain and spinal cord, the influences being propagated through the posterior sacral rami of the hypogastric plexus. In 1864, Frankenhäuser announced that he found the centres for the contractions of the uterus in the cerebellum and medulla, the influences being conveyed through the sympathetic system; the sacral nerves of communication, he believed, were a means for checking uterine contractions. He maintained this view in a work published in 1867, with the addition that there were ovarian nerves external to the uterine plexus, which have motor tracts leading to the uterus. Spiegelberg, while accepting Kehrér's conclusions, in so far as they concerned the manner of the rhythmical contractions of the uterus, was of the opinion that the uterus did not require stimulus from a nerve-centre for its activity, but was like other similar organs which are excited to physiological activity by means of stimuli which the nerves receive in the walls themselves of those organs. These views of Spiegelberg have recently been confirmed by Rein, at least in so far as the cerebro-spinal system is concerned, for having divided, in animals, all connection of the uterus with that system, contractions still took place, such as are customary in conception, pregnancy, and labor. The author made a long series of experiments (sixty-two) for testing the contractile power of the uterus, upon dogs of all ages, pregnant and non-pregnant, having divided, as did Rein, all connection with the cerebro-spinal system. The following conclusions were reached: 1. The uterus is capable of spontaneous rhythmical contractions. 2. In all degrees of its development the uterus is capable of rhythmical contractions, which are more regular in animals which are pregnant or have borne offspring than in those which are yet immature. 3. Marked lowering of the body-temperature slows the contractions, but does not diminish their energy; elevation of temperature, however, at first hastens, and then (if the fever be high) stops them. 4. The normal functional capacity of the uterus is closely dependent upon a normal

temperature of the body. Elevation of temperature has an especially disturbing influence upon it. 5. Disturbances in the circulation of the blood have a very significant influence upon the movements of the uterus; compression of the aorta will completely arrest them after a brief period; compression of the vena cava will have the same effect after a somewhat longer period. 6. The contractions of the uterus are not dependent upon any centre outside of itself.

A. F. C.

**3. J. Veit: The Duration of Pregnancy** (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—Two hundred and eighty days have been commonly accepted as the average duration of pregnancy, by which term is intended the interval between the last menstruation and the delivery of the fetus. It is desirable to be able to fix upon the day when pregnancy is established, and in order to do this it is necessary to know whether the fertilized egg is a product of the last menstrual period, or of the first period which is omitted. Many statistical tables are cited, giving the average duration of pregnancy observed in different countries, and by different men. As these tables vary by as many as thirty days above and below the commonly accepted two hundred and eighty days, they are not of much value. The author thinks that the explanation for the variable period of time which intervenes between the first day of the last menstruation and the birth of the fetus is to be found in the causes by which labor is established. Three questions naturally arise in studying the subject of the duration of pregnancy: 1. What is the relation of ovulation to menstruation, as to time? 2. How long will the spermatozoa retain vital activity? 3. Does ovulation occur only with menstruation? The last two questions are considered to have been answered in the statement that there can hardly be a doubt but that the spermatozoa will remain active from the end of one menstruation until the beginning of the next; likewise, that the labors of Bischoff have shown that ovulation usually follows menstruation. Before the establishment of the last observed menstruation, seminal fluid may be present in the genital canal which will be the fertilizing element for the ovum which appears with menstruation. A second possible means of impregnation lies in the fact that the ovum may have been deposited upon the uterine mucous membrane at the time of menstruation, and have been fertilized after a subsequent coitus. A third possibility is that the ovum may appear before or at the beginning of menstruation, be fertilized at that time, whereupon menstruation will stop, and decidua begin to form. Which of these three theories is the correct one the author is unable to say. The conclusion, on his part, is that we are not, at present, able to say whether impregnation occurs at the time of the last menstruation or at the time of the first one which is omitted. [We therefore remain in the same uncertainty with which we started, and must continue to estimate the duration of pregnancy only approximately.]

A. F. C.

**4. Hoffmann: Certain Proof of the So-called Uterine Milk in the Human Placenta** (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—The investigations of the author were suggested by an extraordinary case of edema of the placenta, which stimulated him to study the normal and pathological conditions pertaining to that organ. The question came forcibly before him as to whether the placental tufts are surrounded by blood or by milk. The advocates of the former hypothesis say that the tufts dip



immediately into the maternal venous or dilated capillary spaces. The adherents of the latter, however, go too far in asserting that with the human female, as with animals, the nutritive material for the fetus is uterine milk alone. The experiments were made upon forty placentaë fully matured, and with many immature ones obtained from abortions at different periods. The material for examination was obtained by inserting a capillary tube into the space between the villi. Examined under a power of five hundred diameters, the following discoveries were made: 1. Red blood-corpuscles were seen varying between four and eight mm. in diameter, varying also as to the intensity of their color. In placentaë taken from the early months of pregnancy, they showed little inclination to *rouleaux* formation. 2. The white corpuscles were from five to ten mm. in diameter, and somewhat more numerous than in ordinary specimens of blood. 3. By far the greater extent of space was occupied by the so-called uterine-milk corpuscles, which are round, transparent, with an extremely thin outer membrane, which is slightly refractive, and have a diameter varying between one and twenty mm. They quite resemble the similar bodies which are obtained from the cow. They are paler than the corpuscles obtained from the secretion of the mammary gland, and look more like albumen corpuscles than like ordinary milk corpuscles. 4. The remainder of the field was occupied by free, clear, intercellular fluid. In addition were seen: 5. Free decidua cells of from twenty-five to fifty mm. in diameter, with nuclei and nucleoli. 6. Round corpuscles of from one and five-tenths to five mm. in diameter resembling red blood-corpuscles. 7. A few small bodies, of different shapes, some of them colored like hematin, and others colorless. 8. Occasional irregular forms and groups of pigment granules. 9. A few other bodies, azure blue in color, and irregular in shape, the origin of which is not known. From these examinations, the conclusion is that the nutritive material which is furnished to the fetus by means of the tufts of the placenta is composed of blood and of uterine milk. As much as several cubic centimetres of this compound material was collected on several occasions. Allowing this to stand in a glass tube, the red corpuscles settled to the bottom, and above them was a stratum of uterine milk mingled with blood-serum. The latter was in thick flakes, opaque, and of a blue, opalescent appearance. The color of the material when first taken varies, in different cases, between a pale-rose and a cherry-red. As to the proportion between blood and uterine milk at the different periods of pregnancy, the author is unprepared to make a positive statement. Concerning the origin of this uterine milk, one must choose between the maternal blood and the decidua. After considerable investigation and reflection upon this subject, the opinion is reached that it is developed from the decidua cells. This opinion is supported by the similar one of Ercolani, who studied the subject in apes. The final summary is as follows: 1. The purpose of the decidua in animals and in the human female is to furnish to the fetus during its intrauterine life with a portion of the nourishment necessary for its growth. To accomplish this purpose, the serotina or decidua placentalis is developed into a special organ for the secretion of milk, and is cast off, after the birth of the fetus, as an integral part of the placenta. 2. The product of this organ, the so-called uterine milk, is secreted in the spaces into which the placental tufts dip. This secretion mingles with the maternal blood

which is here extrasavated, and with it forms the nutriment for the fetus, which is appropriated by absorption through the placental tufts. 3. From the standpoint of comparative anatomy, the difference between the placenta of the higher species of animals and the human being does not obtain, to the extent that has heretofore been insisted upon, as to the phenomena which are manifest in their development. The manner by which the fetal nutriment is absorbed is to receive further investigation.

A. F. C.

**5. Hofmeier: Jaundice in New-Born Infants** (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—The paper opens with a discussion concerning the various theories as to the hepatogenous or hematogenous origin of jaundice, each of which has a measure of truth, but fails to correspond entirely with the author's views. The chief fault lay in a one-sided expression of views in regard to individual phenomena and local processes, or in too great confidence in unproven theories. An extensive series of investigations was made by the author upon icteric children during the first ten days of life, and the following facts were brought out. The disease is associated with a decided loss of weight which comes on during the first few days of life, and with an extraordinary increase, during the first nine days of life, in the discharge of urea, in the formation of uric acid, and uric acid infarcts, and in the phenomena which accompany the latter, as seen in the excretion of albumen. A constant phenomenon which varies in intensity with the intensity of the disease is the excretion of a yellow coloring material with the urine. The less appropriate the nourishment of the child, as to quantity and quality, the greater is the loss of albumen. The proof of this lies in the continued loss of weight contemporaneously with an increased discharge of albuminous elements. This consumption of albumen concerns the albumen which is circulating in the blood-plasma, and thus affects the red blood-corpuscles, together with the respiration which comes into action after the child is born. The longer these processes last and the more intense they are, the greater the consumption of red blood-corpuscles, which process is probably accompanied by an equally active production of new corpuscles. The proof of the latter lies in the complete analogy of phenomena in the direct destruction of red blood-corpuscles in the circulation, with the observed facts in case of fever, and in the results upon the red blood-corpuscles of chloroform narcosis. While this destruction of red corpuscles is excessive only in a physiological sense, on the other hand the bile coloring matter represents one of the most essential physiological products of the coloring matter of the blood. In addition to this, by the beginning of the function of the intestine as an organ of digestion, the secretion of bile is stimulated to a marked degree, so that in consequence of the conditions which have been described, an increased secretion of bile, rich in pigment, occurs, corresponding to the good or bad condition of the child's nutrition. With all these facts in view, there are also certain anatomical conditions which favor the passage of bile into the blood, and the final phenomenon is the icteric discoloration of the skin. When the child is poorly developed and poorly fed, the icterus is likely to continue for some time. The question as to whether the icterus of the newly-born is a physiological or a pathological phenomenon, admits of two answers. It is pathological in so far as the passage into the blood of bile, a substance

which is foreign to it, is always pathological. It is physiological in so far as the causes which produce this result are founded upon the physiological relations which subsist after birth. Very few children are so favorably circumstanced immediately after birth that they can contend successfully against the extraordinary demands made upon their organism for a few days, solely by means of the nourishment which they get.

A. F. C.

**6. Flaischlen: Kidney Disease in Pregnancy and Labor** (*Zeitsch. f. Geb. u. Gyn.*, VIII., 2).—Concerning the literature of the subject the views of several authors are given. Georgi is of the opinion that a nephritis contracted during pregnancy may develop into a chronic inflammation of the kidneys, but that artificial abortion, as a rule, is not indicated. Hofmeier considers the prognosis of the nephritis of pregnancy as very bad. One-third of the cases which came under his observation died. Chronic inflammation is very likely to ensue. He is in favor of artificial abortion. Möricke considers that *engorgement* is an etiological factor of the greatest importance in most cases of this disease. He thinks with Hofmeier that structural changes of so severe a character take place in the kidney that restitution to its integral condition is impossible. Leyden thinks that the structural changes in the kidneys are not due to a venous engorgement, but to a fatty degeneration of the epithelium, brought about, however, by disturbances in the circulation. He thinks that the proof has not yet been given that chronic inflammation will follow. Ingerslev finds it very difficult to decide, in a given case of nephritis during pregnancy, whether this has been caused by the pregnancy, or pre-existed in a latent condition. He thinks that a complete return to health, after this disease has become established, is doubtful. Hiller believes it is proven that a compression of one or both ureters is a possible cause of the disease, and in severe cases is unconditionally in favor of the securing of artificial abortion as a means of saving life. Much light is still needed in order to make the pathology of this subject satisfactory. A reply to two questions would be of the greatest interest: first, what are the distinguishing characteristics, clinically and anatomically, of the nephritis of pregnancy; second, in a given case of this disease, is a differential diagnosis possible between the nephritis of pregnancy on the one hand (*i. e.*, caused by pregnancy) and acute and chronic inflammation (*per se*) of the kidneys, on the other, and can this disease which is under consideration develop into chronic nephritis? The investigations of the author included the examination of the urine of one thousand pregnant women, at different periods during pregnancy and also after it was concluded. In only ten of these cases was pronounced albuminuria found and studied subsequently, and only four of these could be reckoned as severe cases. In the six mild cases the edema which existed when they were received into the hospital disappeared after a few days of rest, showing the independence of this symptom upon the nephritis of pregnancy. In the four severe cases there existed abundance of albumen in the urine, scanty discharge of urine, extensive fatty degeneration of the epithelium of the kidneys, and few or no red blood-cells—conditions which are quite characteristics of anæmia of the kidneys. In the milder cases the disease seemed to be limited to the epithelium of the glomeruli, and the albuminuria was apparently conditioned upon this. The absence of cylindrical



and kidney epithelium in the sediment of the urine shows that the epithelium of the canaliculi was intact. The author thinks that edema of moderate extent might be expected from pressure of the enlarged uterus upon the veins which come from the lower extremities, but if the edema were universal that it is due to insufficient heart action, caused possibly by hydremia in consequence of long-continued loss of albumen. In making a differential diagnosis between the nephritis of pregnancy, and chronic interstitial nephritis, particular attention should be paid to the quantity of urine discharged and to its specific gravity. These factors are of greater importance than the sediment which is precipitated. If, with considerable albumen, we also find a low specific gravity, and a rather abundant discharge, the suspicion is warranted that the case is one of chronic nephritis, for in cases of nephritis of pregnancy in which albumen is abundant, the specific gravity is always high, and the quantity discharged is small. In differentiating from chronic parenchymatous nephritis, the difficulty is still greater. In this as well as in the disease just mentioned we must rely largely upon the condition of the heart, for our opinion. In either of these chronic diseases we shall find hypertrophy of the heart, and a characteristic hard pulse. The author has not yet seen any evidence, either in literature or in personal experience, that the nephritis of pregnancy develops into chronic nephritis. He admits, however, that the question is undecided. With reference to the second part of his subject, namely, kidney diseases brought about by parturition, two series of cases are cited. From these cases it appears that a kidney affection may be produced by parturition, which is characterized clinically by hyaline and granular casts, and by the fatty degeneration of the epithelial elements of the kidney. The author thinks that this form is connected etiologically with the form which results from pregnancy. The author sums up his investigations as follows: 1. In one series of cases reflex anemia of the kidneys can be explained only by reference to the gravid uterus. This constitutes the nephritis of pregnancy. The first result of this is seen, anatomically, in changes in the epithelium of the glomeruli; clinically, in the existence of albumen. Degenerative changes in the epithelium of the canaliculi follow, with increased discharge of albumen together with casts and epithelial debris. These changes come most commonly toward the end of pregnancy. In cases in which chronic inflammation pre-exists, the disturbances in the circulation come earlier, and with greater intensity, as the inflammation is more or less advanced. When pregnancy ends, the disturbances in the kidney end also. The proof is wanting that there is a development into chronic nephritis, and, *a priori*, this is quite improbable. The danger in the disease lies in the retention of urine, in consequence of the fatty degeneration process in the canaliculi, and eclampsia consequent upon this, which will endanger the life of both mother and child. In order to avoid this, artificial abortion is indicated in severe cases. 2. In a second series of cases the disturbances in the circulation of the kidney first manifested themselves as reflex phenomena, for which parturition was responsible. They occurred usually in cases in which labor was protracted. In a certain number of cases vaso-motor disturbances were probably causative. If kidney disease existed previous to parturition, it is likely to be augmented by the latter, but a nephritis caused by parturition never eventuates in chronic nephritis.

**7. Max Græfe: Ten Cases of Cyst of the Vagina** (*Zeitsch. f. Geb. und Gyn.*, VIII., 2).—The work of Winckel upon this subject, though excellent in many respects, was deficient in that it presented the study of only a few cases, and an incomplete microscopical examination. The entire formation should be studied microscopically in order to give a complete knowledge of the subject. In the ten cases which are reported, the tumors were of varying size, not exceeding that of a goose's egg. They were all operated upon, and the tumors were very carefully studied. The patients supposed that they were suffering from prolapsus uteri, and some of the cases had been diagnosticated as troubles of that nature, and had been pronounced incurable before they appeared at the Berlin gynecological polyclinic. The location of these growths is oftener on the anterior or posterior vaginal wall than on the lateral. The outer surface of the cyst-wall is always covered with the pavement epithelium of the vagina. The thickness of the wall varies between one millimeter and one centimeter. When the wall is thick, in addition to connective tissue, there are bundles of smooth muscular tissue, thus corresponding to the normal tissue of the vagina. The inner surface of the cyst is usually covered with cylindrical epithelium, but the cylindrical and the pavement epithelium are sometimes found upon the same wall. Klebs considers that they are of lymphatic origin. The author thinks that they are similar to, or identical with, retention cysts. Freund gives his opinion that they are developed from the ducts of Müller. [The operation which is recommended by Schröder for such tumors as are here described, consists simply in opening and draining the cyst. This is considered a safer plan than its extirpation, especially when the tumor arises from a large extent of surface.]

A. F. C.

**8. Thiede: Infiltration of the Abdominal Walls, resulting in Necrosis, after Septic Puerperal Infection** (*Zeit. f. Geb. und Gyn.*, VIII., 2).—This paper gives an account of two cases of severe puerperal disease, with unusual complications. In the first case, the patient was twenty-seven years of age, and on the eighth day after her second labor was, without previous mishap, suddenly seized with severe gastric pain, headache, and violent fever. The lochia changed from a normal purulent to a bloody condition. The uterus was still quite large, on the eleventh day, but rather firmly contracted. The finger could be readily passed as far as the internal os, but the latter was closed. A gram of ergotin was ordered three times daily, and ice bags upon the abdomen. The condition did not change materially during the next few days, the temperature remained high, the pulse rapid, and the pains severe. Upon the seventeenth day an intrauterine examination was made. Bands and irregularities were found upon the placental site, which were removed with the finger, and the uterus was washed out with carbolized water. An inflammatory condition of the uterus and bladder followed. On the fifteenth day after the operation, the skin of the abdomen appeared to be infiltrated, and in a few days more, abscesses appeared. These were properly dressed, though there was great loss of substance. Granulation followed, and in the tenth week from the time of labor, transplantations of skin were made. In three weeks more the wound was closed. The patient recovered her usual health. In the second case, severe hemorrhage followed an abortion at the third month. This con-

tinued intermittently until the uterus was explored, and the remnant of the placenta was removed. Inflammation of the uterus and its surroundings followed, and the abdominal walls were infiltrated as in the preceding case. The healing process was very slow, indeed, the woman remained an invalid. In discussing the cases, the author remarks that inflammation of the abdominal walls, which may be deep-seated, is liable to occur, and probably does occur, from the rough abdominal palpation which patients, especially hospital patients, sometimes receive. He is certain, however, that this element of causation was absent in his cases. The long-continued use of ice-bags upon the abdominal surface might be adduced as another possible cause, but he thinks this improbable in his cases, as the pain of the disease seemed to be relieved by the iruse, and would not warrant their discontinuance. He considers that there was a peculiar malignity about the cases, and that after the uterus and its surroundings had been involved, the process worked outward. In the second case, this process involved the inguinal glands in its course, and tended to prolong the disease.

A. F. C.

**9. Leblond and Frissiaux: Resorcin in the Treatment of Chancroids** (*Annales de Gynécologie*, January, 1883).—The reporters have used resorcin in chancroids, buboes, mucous patches, vaginitis, and urethritis with success. Six cases of its use in chancroids are recorded where a cure was effected in an average of twenty days, whilst in five cases, where iodoform was used, an average of thirty-eight days was required. The drug was used in the proportion of one part to four of water, applied every two to three days.

E. H. GRANDIN.

**10. Boissarie: The Sponge Tent and Dilatation of the Cervix** (*Annales de Gynécologie*, January, 1883).—Two cases are reported. In the one, the patient, æt. 35, married, but sterile, had suffered for three years from constant menorrhagia. The uterus was enlarged, in good position, the cervix soft, open for the first phalanx, whereby a movable fibrous polyp was discovered. For three successive days, a sponge tent was introduced, when a circumscribed peritonitis developed which soon became general, leading to death, at the end of six weeks. In the second case, the patient, æt. 60, had lost blood for two years. She was anemic, the cervix small and indurated, the body retroverted and enlarged. Four sponge tents were successively used, each being left *in situ* but a few hours. There resulted only slight dilatation, when B., in order to stop the hemorrhage, injected a few drops of iodine. He succeeded, but excited suppuration, followed by a peritonitis which finally yielded to treatment. B. remarks that in the first case the peritonitis was evidently due to the use of sponge tents, whilst in the second case it is possible the peritonitis followed on the injection of iodine.

E. H. GRANDIN.

**11. Dembo (St. Petersburg): Uterine Contractions, Independently of the Cerebro-Spinal System** (*Annales de Gynécologie*, February, 1883).—The centres whence uterine contractions are derived have given rise to great difference of opinion. Some authorities have placed them in the cerebellum, others in the medulla, others in the sympathetic, etc. The inference, hence, is, that centres may exist anywhere in the cerebro-spinal system, also that, like the heart, the uterus may possess essential centres, either in its own substance or in that of its annexes. D.'s ex-



periments go far towards proving this. He used for his researches rabbits, dogs, cats, etc., and from a series of 120 experiments deduces the following conclusions: 1. In the anterior superior vaginal wall, there exist points the electric excitation of which provokes uterine contractions, whilst electrization of the posterior vaginal wall, uterus, cervix, etc., provokes only local contractions. 2. The negative pole always excites greater contractions than the positive. 3. These contractions can be aroused a few hours after the animal's death, and in two hours, or more, after the uterus and vagina have been removed, provided they be placed in serum or in a saline solution at about 100° F. 4. The rabbit answers best for experiment, and, as it possesses two distinct uteri, the one or the other can be made to contract according as the superior anterior vaginal wall on the one side or the other be stimulated. 5. During pregnancy, the galvanic current has greater influence on uterine contractions than the faradaic. By means of applications of chloride of gold, D. has demonstrated the existence of numerous ganglionic groups in the upper portion of the peritoneal covering of the anterior vaginal wall, and to the presence of these are probably due the contractions.

E. H. GRANDIN.

## 12. Doleris: Uterine Myomas in Connection with Pregnancy and Labor (*Archives de Tocologie*, January, 1883).—Two cases are reported.

I. Patient *æt.* 40; previous history good. One premature labor at 22; membranes ruptured seven days before entrance in the hospital; was then examined by a midwife, and there followed hemorrhage, chills, fever, and a fetid vaginal discharge. On entrance, the pulse was feeble, rapid, and irregular, labia and abdomen emphysematous. No uterine contractions, no fetal heart. Vaginal examination revealed the cervix almost taken up, the os admitting one finger; head presenting in first position. Barnes' dilators were introduced during the day, and at night the os admitted three fingers. The cervical tissue seemed indurated. Forceps, cranioclasty, cephalotripsy were all essayed in vain. Patient died shortly after; at autopsy, there was no evidence of peritonitis. On opening the uterus, a fibroid of the size of a fetal head at term was found, developed at the junction of the os internum with the body, on the left side. The uterine mucous membrane was torn and eroded in the neighborhood of the tumor. The placenta was attached to the right side of fundus. D. remarks that death was due to rapid infection at the point where uterine mucosa was torn and eroded.

II. A patient of Dr. Ribemont's, *æt.* 26, *Opéra*, of good antecedent history. Eleven days previous to entering hospital, membranes had ruptured. On examination, a tumor occupying the whole pelvis, and growing from the lower uterine segment, was found. The cervix was gone, os admitted two fingers. Head presentation. Fetal heart regular. The patient exhausted and feverish. Craniotomy was performed, but delivery could not be effected. Antiseptic injections were ordered, and in about twenty-four hours the diminished head appeared, already giving evidence of decomposition. Body and placenta soon followed. A hot carbolized intrauterine injection was given. On vaginal examination, the tumor was found to occupy the posterior and left side of the pelvis. Patient left hospital in three weeks—well.

On comparing the two cases, it is seen that in the last, the tumor being

fairly movable, the diminished fetal head was able to work by, whilst in the first case, the tumor being interstitial, could not be otherwise than an obstacle to dilatation. Here, also, the ante-mortem diagnosis could not be made. D. further dilates on the difficulty of making a diagnosis in cases of myomas complicating pregnancy, and suggests that in cases of rigid cervix one ought to think of the possible presence of a tumor. He insists on the necessity of a thorough examination, especially the use of bimanual palpation. If necessary, the introduction of the whole hand into the vagina must be practised.

E. H. GRANDIN.

**13. Chassagny: The Elytro-ptyergoid—its Hemostatic, Dilating and Oxytotic Use** (*Archives de Tocologie*, January, 1883).—For many years C. has endeavored to devise an apparatus which would replace the colpeurynter or tampon in cases of hemorrhage, would replace Barnes' or similar dilators, as also the fingers in cervical dilatation, and which would at the same time, by its presence, prove an efficient excitator of uterine contractions. After many experiments, he has contrived one which he claims has, in his hands, fulfilled all the above indications. It consists of two portions, a speculum and the bladder of a pig. The speculum has adapted to its inner end two blades which, on pressure, will expand, and thus retain the apparatus in the vagina, whence the name "elytro-ptyergoid" (wings in the vagina). The bladder is pushed into the speculum, its open end having been attached to a syringe or irrigator. When the speculum has been introduced into the vagina, water is injected or allowed to flow into the bladder, it expands, pushes the specular wings outwardly, and thus we have a self-retaining tampon. Its presence in the vagina and the pressure it exercises on the vaginal walls soon excite uterine contractions. As the cervix dilates, a portion of the bladder forces its way into the cervical canal, thus becoming a dilator. To understand the rationale of this latter action, suppose the bladder placed in an elastic cavity which it fills without being entirely distended. Now, make a small hole in the cavity, and inject air or water into the bladder, and a portion will insinuate itself into the hole, like the finger of a glove, and thus effectually dilate it.

E. H. GRANDIN.

**14. Duplay: Cysts of the Broad Ligament** (*Archives de Tocologie*, January, 1883).—From an analysis of numerous cases, D. reaches the conclusion that aspiration is the preferable method of treatment. If this fails, injections of iodine should be tried before any operative means are resorted to. Recovery followed a single aspiration in nine cases of his own; of one hundred cases treated by Boinet, by first aspiration, and and then injection, complete cure followed in fifty-five cases on a single injection; in thirteen two injections were required; in seven, three injections; in three, four; in one, five aspirations and seven injections; in one, nine aspirations and six injections. Failing these methods, where a pedicle exists an operation for removal is very simple; if none exists, enucleation, as proposed by Miner, of Buffalo, in 1876, and as successfully performed by Kocher, of Berne, in 1880, may be attempted.

There follows a report of ten cases where cure supervened on aspiration or injection.

E. H. GRANDIN.

**15. Budin: The Arrangement of Membranes and Fetuses in Twin Pregnancies** (*Archives de Tocologie*, March, 1883).—The diagnostic

signs from a twin pregnancy vary according to the manner in which the membranes and their contents lie in utero. Leaving aside those cases where there exists but one amniotic cavity, B.'s inquiry is directed to finding the position which may be assumed where there exist two separate cavities. He distinguishes three: 1. The fetuses lie side by side, one in the right, the other in the left half of uterus. 2. One lies at fundus, the other over cervix. 3. One lies in front of the other. In the first case, the membranes may be entirely distinct, with two separate placentaë, or there may exist but one placenta. In the second variety, the fetus at the fundus usually lies transverse, the second presenting by an extremity. On examination, the uterus will be found to be transversely developed at the fundus. The afterbirth may present diverse appearances. In one case there existed but one placenta with two amniotic cavities, exit from the second being through the first; at their junction, however, there was but a single chorion. In another case, there existed two cavities, two placentaë, two amnions, and two chorions, so that one set of membranes could be separated from the other. In still a third case, the cavity which had contained the first fetus was large, and behind it was a smaller cavity for the second fetus. On the periphery of the membranes were two distinct placentaë. The third variety is rare, and offers difficulties to diagnosis. One fetus lying against the anterior wall of the uterus, it is obviously extremely difficult either to palpate the second or hear its heart. The size of the abdomen, hydramnios excluded, will be the only point exciting suspicion. B. relates two cases where he was unable to make a diagnosis.

E. H. GRANDIN.

**16. Rein (St. Petersburg): On the Essential Nervous Plexus of the Uterus** (*Société de Biologie*, March, 1882).—From experiments on rats, mice, rabbits, etc., R. concludes that this plexus lies outside of the uterus, mainly in the cellular tissue surrounding the vagina at the point where the hypogastric plexus anastomoses with filaments of the sacro-uterine nerves. Many ganglionic cells are found in it, lying for the most part along the course of the principal nervous branches which go to, and come from, the plexus. The upper limit of these cells is at the beginning of the tubes; the lower limit is lost in the vaginal plexus. No fibre either from the hypogastric plexus or from the sacral nerves goes to the uterus without first passing through the uterine plexus.

E. H. GRANDIN.

**17. A Case of Fibrous-Adipose Tumors of Abdominal Cavity** (*New Orleans Med. and Surg. Journal*, March, 1883).—Patient æt. thirty-six, Ipara. Suspecting a third pregnancy, she consulted a physician in Memphis, who, in connection with others, decided against this condition and in favor of an enlarged ovary. An attempt was made to remove this by abdominal section, but the customary incision from pubes to umbilicus "exposed such a state of things as caused the medical men to decline further interference." Some months afterwards the abdomen measured seventy-two inches above umbilicus. She died shortly afterwards. At autopsy, the descending colon was found to be the sole connection between stomach and rectum; the abdomen contained seventeen tumors, each independent of the other, lying in a cellular network. Two were adherent to abdominal wall. No evidence of peritonitis; ovaries and other organs healthy. The tumors consisted of a fibrous centre covered by adipose tissue.

E. H. GRANDIN.



**18 Wyder: The Condition of the Uterine Mucous Membrane During Menstruation** (*Zeitschr. f. Geb. u. Gyn.*, Bd. IX., Heft 1).—Unsettled as this question is at the present time, the author thinks we are nearing a solution. The investigations of Möricke and Sinéty in this direction have been quite extensive. Authoritative also are the writings of Kundrat, Engelmann, Williams, and Leopold upon the subject, though none of them has reached a satisfactory conclusion. All these authors agree in their belief that, during menstruation, the uterine mucous membrane is deprived of its epithelium and is changed into the condition of a wound. Williams believes that the entire mucous membrane is shed: the other authors think that only the superficial layers are lost. Williams, Kundrat, and Engelmann consider that the fatty degeneration of the mucosa menstrualis is the factor, above all others, which leads to hemorrhage; Leopold considers it a secondary process which occurs in consequence of the hemorrhage, the latter being of primary importance, as proven by the widely-dilated capillaries at the menstrual period, and the relatively poor supply of veins. The regeneration of the lost tissue is accomplished through the agency of the mucous membrane which has remained, and which is found to be in a condition of cell-hyperplasia. According to Williams and Engelmann, this process can be observed in the intermuscular portions of the mucosa. Kundrat and Engelmann believe that the renewed membrane is analogous to the decidua, and Wyder speaks of the existence, for this purpose, of an abundance of characteristic interglandular cells, which, at certain points, give evidence of the possession of nuclei. Möricke's views concerning the loss of epithelium during menstruation are summed up as follows: 1. The mucous membrane does not disappear, either wholly or in part: on the contrary, it retains its cylindrical epithelium. 2. Interglandular cells are not increased nor enlarged, and fatally degeneration only occurs to a limited extent. 3. The vessels are enlarged and greatly dilated. Extravasations into the upper layers of the mucous membrane take place. These results were obtained after investigations upon living subjects, at different periods of menstruation. Sinéty agrees with Möricke as to the non-removal of epithelial layers, and remarks that the special characteristic of the menstrual fluid is the presence of a very large number of white corpuscles, or of the embryonal elements which they contain. A comparison of the propositions of Möricke and Sinéty with the carefully analyzed histories of Leopold's and Williams' cases, together with a careful series of investigations on the part of the author, has led him to the following conclusions: 1. During menstruation, the superficial layers of the uterine mucous membrane are thrown off, the remaining portion continuing intact. The extent of this exfoliation varies with different individuals, and the material exfoliated consists partly of entire cells, partly of broken-down cells and detritus, and, in some cases, of shreds of mucus similar to those which are found in membranous dysmenorrhea. 2. This loss of substance is due to menstrual hemorrhage, not to a primary fatty degeneration. The latter is rather a consequence of the removal and destruction of tissue, caused by the hemorrhage. 3. The superficial and middle layers of the mucous membrane which remains exhibit an abundance of small cells, but have no resemblance to the decidua of the pregnant state. In the deepest layers, there is a cellular hyperplasia of the interglandular tissue, the purpose of which manifestly is to renew the tissue which has

been lost. 4. Degeneration of the superficial epithelium occurs, as well in respect to the glandular epithelium as to the larger or smaller islands of epithelium which remain after the surrounding tissue has been swept away by the current of the menstrual blood. AND. F. CURRIER.

**19. Kleinwächter: Concerning the Development of Uterine Myomata** (*Zeitsch. f. Geb. u. Gyn.*, Band IX., Heft 1).—The steps in this process are not yet fully known. That there is a considerable hypertrophy on the part of the muscular fibres is not probable, but there is a transformation of round into spindle cells which cannot be distinguished from organic muscular fibres. The debatable point is whether the round cells develop from the connective tissue or from divisions of the cells of muscular tissue. Small growths are best for the study of this subject, for in the larger ones either the process of development is complete or the points at which it is still in progress are hard to find. These are not difficult to find, even very small ones. Pure myomata, or fibro-myomata, in which the connective tissue is in excess of the organic muscular tissue, to a greater or less degree, are the varieties which were found by the author, pure fibromata being never found. They were usually subserous and multiple, were often found upon the fundus uteri, less frequently upon its posterior aspect or upon the lower segment of the body, and exceptionally upon the anterior wall. The peritoneum appears to be somewhat thickened at the point where the growth projects. The bundles of muscular fibres crossing one another in different directions are crowded together somewhat more closely than they are in a perfectly normal condition. The length and breadth of the cells and nuclei is somewhat greater than in a normal unimpregnated uterus, though the difference is often slight. As a rule, the entire myoma is distinctly outlined from the surrounding tissue, which is either due to its connective-tissue capsule or to the different course which is taken by the bundles of muscular fibres. Upon microscopic section, the form of the myoma is usually found to be spindle-shaped, with a tapering pedicle extending from one side. As to vascular supply, the capillaries were usually found to be very large; the arteries and veins were almost wanting in the smaller growths. On both sides of the capillaries were round cells, arranged in rows, which, in many cases, made a sort of covering. These round cells were somewhat smaller in diameter than the cross-section of a muscular fibre, and seemed to gradually assume a spindle-shaped appearance. As they developed into spindle cells, the capillaries were gradually obliterated, and, finally, in place of the vessel there was a bundle of muscular fibres. This suggested the history of other parts of the growth. The pedicle which has been spoken of disappeared in the neighboring muscular tissue, and suggested the idea that the tumor was wont to develop from such a point. The author thinks it probable that very many of these growths soon finish their career of development, but whether such a stage is permanent or transitional he is unable to say. In the multiple form of this growth, in which groups of two or three are found, each separate tumor is provided with its connective-tissue capsule, or with a strong layer of normal muscular tissue. A new development of vessels was never seen by the author in a myoma, but was seen in a fibro-myoma. AND. F. CURRIER.

**20. J. Matthews Duncan: Gulstonian Lectures on Sterility in Woman** (*Medical Times and Gazette*, February-May, 1883).—Fecundity requires the combined matter and forces of two duly developed individuals to produce it. Sterility, therefore, may depend on error in one or in other, or in both. Sterility in man may depend on failure to produce semen, the production of morbid semen, or failure to deposit semen properly. Whilst in these lectures sterility due to man is not considered, its numerical amount ought to be stated. This has been established by Gross, in his work on sterility, to be about one in six. It must be noted, however, that this statement is very insecure, seeing that in making estimates of man's sterility no account is taken of the fact that the fault in the semen may be only of a temporary nature, and that even though conception takes place, the fetus may fade and die prematurely from disease implanted in it by the male. Sufficient for the present purpose the statement that the paramount source of sterility is in the female. In these lectures no account is taken of cases where, from absence of uterus, or ovaries, or vagina, conception is impossible.

At the outset, sterility may be defined as either absolute or relative.

Absolute sterility comprises those cases where there is no conception whatsoever, as also those cases where the impregnated ovum disappears in the uterus or tubes without leading to a recognizable abortion. Another division, which may be called sterility not absolute, is where there is failure to produce a viable child, though there is evidence of conception. In cases of sterility absolute and not absolute, there is, therefore, no addition made to the population.

Another kind of sterility is where a woman produces one or more living children, but in number not according to her conditions of age and length of married years. This is relative or acquired sterility. It has its parallel in the vegetable kingdom, where a plant produces flowers and matures fruit, but in *small number* compared with others of its kind. In woman it is often seen in the production of an only child (only child sterility).

All kinds of sterility may be congenital or acquired. The amount is found by counting the number of productive and unproductive marriages within the reproductive age—from fifteen to forty-five. Estimates from various sources give an amount varying from one in seven to one in twelve—one in ten being nearer the true amount.

As for the absolutely sterile, the annexed table gives the amount in 504 cases in D.'s practice during a period of five years:

AGE AT MARRIAGE.	YEARS MARRIED.							TOTALS.
	UND. 3.	4 TO 8.	9 TO 13.	14 TO 18.	19 TO 23.	24 TO 28.	29.	
15-19.....	12	19	15	4	7	2	1	60
20-24.....	70	66	37	24	13	9	..	219
25-29.....	47	51	20	8	8	..	..	134
30-34.....	26	20	8	4	1	..	..	59
35-39.....	6	13	4	..	..	..	..	23
40-45.....	6	3	..	..	..	..	..	9
TOTALS....	167	172	84	40	29	11	1	504

As for only-child sterility, Ansell, in 1,767 fertile marriages with a mean age at marriage of about twenty-five, and allowing ample time



for the exhibition of fecundity, found it existing in one out of thirteen.

It must be remembered, in approximating any degree of sterility, that the amount will vary according to the age at marriage, and that the average individual must be found, since individuals vary extremely.

There are several tests of relative sterility, secondary to that implied in the paramount question, How many did she bear? These tests are as follows: 1. When after marriage did child-bearing begin? 2. With what rapidity did the children follow one another? 3. When did child-bearing cease? 4. What was interval between first and last child, or the length of child-bearing life?

A study of the following tables gives an answer to the first question. The first was compiled by D. from the Edinburgh and Glasgow Register for 1855; the second by Ansell. The latter is more valuable, since it is corrected four times and stillborns are excluded.

DUNCAN'S TABLE.

YEARS MARRIED.	NO. OF BIRTHS.	YEARS MARRIED.	NO. OF BIRTHS.
Less.	608	10	1
1	2,390	11	3
2	437	12	4
3	133	13	2
4	61	14	—
5	32	15	1
6	27	16	—
7	12	17	—
8	5	18	1
9	5		
		TOTAL.....	3,722

ANSELL'S TABLE.

YEAR AFTER MARRIAGE.	NO. OF FIRST CHILDREN.	YEAR AFTER MARRIAGE.	NO. OF FIRST CHILDREN.
1	3,159	9	7
2	2,163	10	7
3	421	11	5
4	137	12	4
5	69	13	3
6	26	14	2
7	21		
8	11		
		TOTAL.....	6,035

D.'s table gives a mean interval of seventeen months between marriage and birth of living child; it shows, too, that in the majority of cases fecundity is not demonstrated by a living child till one year of married life is passed; also, that there is no ground for presumption of sterility till the fourth year of married life begins.

Ansell's table gives a mean interval of sixteen months between marriage and first child. From these tables, then, the conclusion may be drawn that women delaying the commencement of fertility beyond sixteen months from date of marriage are already showing a degree of relative sterility.

The answer to the second question is that breeding women usually have successive children at intervals of eighteen months. The following table, compiled by D., gives a mean interval of twenty months.

NUMBER OF CHILDREN.	NUMBER OF MOTHERS	DURATION OF MAR- RIAGE IN MONTHS.	AVERAGE INTERVAL- BETWEEN SUCCESSIVE BIRTHS.
1	3,722	17	.....
2	2,803	38	19.0
	2,534	64	21.3
4	1,082	90	22.5
6	1,543	115	23.0
5	1,321	137	22.8
7	848	162	23.1
8	641	181	22.6
9	425	203	22.5
10	232	225	22.5
11	152	235	21.4
12	61	246	20.5
13	34	263	20.2
14	11	281	20.1
15	6	290	18.7
16	2	336	21.0
17	2	252	14.8
18	1	252	14.0
19	1	204	10.7
AVERAGE .....			19.9

A table from Ansell, deduced from an analysis of 25,000 cases, gives a mean interval of eighteen months.

Wherefore, it is justifiable to hold that a married woman, who, during child-bearing life, does not have a child every eighteen months, is exhibiting relative sterility.

In considering the third question, when did child-bearing cease, the child-bearing period of life must not be confounded with the period during which a woman menstruates. Only a part of this latter is occupied in child-bearing. Under favorable circumstances, when a woman begins to bear she will continue to do so regularly till her last child is born. It is noteworthy that whilst menstruation usually ceases at from forty-five to fifty years, procreation ceases at an average age of thirty-eight. This latter is deduced from a table of Ansell's based on four thousand eight hundred and ninety-nine observations, the mean age of marriage being twenty-five. Hence women in whom the child-bearing career ceases earlier, show relative sterility. The table referred to is annexed, as it also answers the fourth question: How long does child-bearing continue?

NUMBER OF FAMILY.	NUMBER OF CASES.	MEAN AGE OF MOTHERS.	TIME OCCUPIED IN CHILDBEARING.
1	244	30 years and 6 months	1 years and 6 month
2	401	32 " " 11 "	3 " " " "
3	425	34 " " 5 "	4 " " " 6 "
4	485	35 " " 10 "	6 " " " " "
5	565	36 " " 11 "	7 " " " 6 "
6	494	38 " " " "	9 " " " " "
7	490	39 " " " "	10 " " " 6 "
8	467	39 " " 8 "	12 " " " " "
9	387	40 " " 6 "	13 " " " 6 "
10	312	40 " " 10 "	14 " " " 10 "
11	239	41 " " 1 "	15 " " " 2 "
12	170	41 " " 7 "	15 " " " 7 "
13	115	42 " " 5 "	16 " " " 5 "
14	43	41 " " 10 "	15 " " " 10 "
15	34	42 " " 8 "	16 " " " 8 "
16	10	43 " " 6 "	17 " " " 6 "
17	10	43 " " 5 "	17 " " " 5 "
18	6	44 " " 7 "	18 " " " 7 "
19	1	45 " " " "	19 " " " " "
20	1	45 " " " "	19 " " " " "

A woman, therefore, may be regarded as relatively sterile, who, married within the age of nubility (twenty to twenty-five) ceases to have children within fifteen years from the birth of her first child.

The last question, how many children does a woman bear? is an important one, as on its answer depends the settlement of the relative amount of sterility. From various sources the opinion is justified that a healthy woman, under favorable circumstances for natural procreation, that is to say living in wedlock, should have a family of ten; whence women under such circumstances, having less than ten, are relatively sterile. Above ten, production is excessive, leading to weak and idiotic children.

Constitutional conditions, such as cold and heat, over- and under-feeding, youth and old age, degradation of general health, confinement and interbreeding, are of great importance as causes of sterility. So similar are the effects of such causes on animals, plants, and man, that much may be gleaned from the first two of value in reasoning about sterility in the last. A plant transferred from the garden or hot-house to the close atmosphere of a house will soon suffer in general health and may become sterile or nearly so as the result. Overstimulation by manure is a well-recognized cause of sterility in plants, which may show itself in paucity of flowers or in abortive flowers. The influence of age on the bearing of plants is apparent—the young tree bearing little fruit, the old tree ill-developed fruit or none. Similarly, interbreeding of plants leads to weakness, malformation, hybrids, sterility; tropical plants imported to colder climates do not thrive. As for animals, if the female of any kind be made to breed when very young, her own growth is apt to be stunted and her offspring not of the best quality. The production of obesity in the female is likewise hostile to fertility. The sterility resulting in animals from confinement is noteworthy, as also from exposure to degrees of heat or cold not according to an animal's nature. The evil effects of interbreeding are strongly marked in animals.

The above results in animals closely approximate to what is found to exist in the human female. Statistical evidence as to the influence of age and early marriage on sterility shows in general that women married under twenty are relatively more sterile than those married between twenty and twenty-four, and that slowness of fecundity increases with every additional quinquennial. The annexed table clearly evidences this.

Ages of wives at marriage.....	15-19	20-24	25-29	30-34	35-39
Number of wives.....	700	1835	1120	402	205
First children.....	649	1905	809	251	96
Sterile wives.....	51	....	311	151	109
Percentage sterile.....	7.3	....	27.7	37.5	53.2
Proportion sterile: 1 in.....	13.72	....	3.60	2.66	1.88

The next point of interest is the influence which marriage at an early or late age has on the bearing of children. Inquiry demonstrates a diminished amount at the sterile ages. The following table showing the mortality of children born in marriages at different ages brings this point out well.



TIME ELAPSED SINCE BIRTH OF FIRST CHILD.	MORTALITY PER CENT OF CHILDREN BORN TO MARRIAGES AT AGES:			
	10-20	21-25	26-30	31-35
10	26.87	37.09	37.80	35.48
20	47.44	43.10	44.36	61.67
30	53.03	43.89	48.53	64.29
40	63.12	57.14	68.00	50.00

Another point strongly brought out by statistical research is that the first child of young or old marriages is apt to be imbecile. The following tables bring out the point well. They are compiled from statistics furnished by Arthur Mitchell.

NUMBER OF PREGNANCY.	PERCENTAGE OF ALL BIRTHS.	PERCENTAGE OF IDIOT BIRTHS.
First.....	22.8	33.0
Second.....	17.7	18.8
Third.....	15.5	17.6
Fourth.....	12.1	2.4
Fifth.....	9.4	2.4
Sixth.....	7.4	2.4
Seventh.....	5.2	7.0
Eighth.....	3.9	3.5
Ninth.....	2.6	2.4
Tenth.....	1.3	7.0
Eleventh.....	.9	3.5

Age.....	20-24	25-29	30-34	35-39	40-44	45-49
Percentage of all children.....	22.02	39.99	23.61	14.76	5.15	0.58
Percentage of idiots.....	25.88	25.88	10.58	10.58	23.53	3.53

Finally it is a curious fact that heiresses show a high degree of relative sterility. For instance, Galton, who has investigated the subject, found that of the wives of peers, 100 who were heiresses had 208 sons and 206 daughters; whilst 100 not heiresses had 336 sons and 284 daughters.

The influence of age on sterility having been examined, D. proceeds to the other causes which, as has been pointed out, are very influential in animals and plants. The evidence in regard to these in the human female is either insufficient or else is matter of belief rather than open to demonstration. It is undoubted, for instance, that bad general health may be a powerful cause of sterility, but as yet no trustworthy evidence in support of this belief has been presented. Similarly with the influence exercised by cold and heat. Evidence, however, points to the fact that interbreeding is followed by as evil consequences in man as in animals. Whence the almost universal practice of all races of avoiding closely related marriages.

The next points considered are the relations existing between dysmenorrhea and sterility and the state of sexual appetite and pleasure in the sterile. The prevalent belief that dysmenorrhea is frequently associated with sterility is not unfounded. Especially is this true of that

form which is variously called mechanical and obstructive, but which should rather be called spasmodic. Of three hundred and thirty-two absolutely sterile women, one hundred and fifty-nine suffered from this spasmodic dysmenorrhea. Sexual desire and sexual pleasure are usually combined, but not invariably so. A woman may have desire, and yet derive no pleasure from copulation, and the reverse holds true. It is nearly certain that both desire and pleasure are very important predisposing causes of fertility. Excess of desire is probable unfavorable, since it leads to excessive indulgence, which of itself is a cause of sterility, especially in the young. On the other hand, entire absence of desire and pleasure, or one of them, or the presence of sexual antipathy and dyspareunia are not necessarily causes of sterility. Whilst it is difficult, hence, to draw any hard and fast deductions, it is D.'s impression that whilst in healthy normal women there is abundance of sexual or reproductive energy for purposes of fertility, in many sterile or relatively sterile women, there is deficiency. It would seem, too, that in women of deficient reproductive energy, excess in one department may be compensated by deficiency in another, there being only a limited store of original energy. The following may be taken as typical of this class. A robust healthy woman, married at eighteen; has three children and four miscarriages before she has passed twenty-three years of age. Up to birth of her last child, and for five years subsequently, she has neither desire nor pleasure. Five years after her last pregnancy, she suddenly has intense desire and pleasure, but remains sterile for four years. Here, then, fertility is present in the absence of desire and pleasure; sterility is present in the presence of desire and pleasure. The annexed table relates to the absence and presence of desire and pleasure in a number of sterile women:

AGE AT MARRIAGE.	NUMBER.	DESIRE.			PLEASURE.		
		PRESENT.	ABSENT.	NO NOTE.	PRESENT.	ABSENT.	NO NOTE.
15-19	59	18	4	37	15	8	36
20-24	220	78	18	124	69	27	124
25-29	134	35	12	87	31	18	85
30-34	59	16	3	40	14	5	40
35-39	23	3	1	19	3	3	17
40-45	9	2	1	6	2	1	6

It is evident that little can be done directly in the way of prevention of sterility. Much may be accomplished, however, by advocating marriage within what have been shown to be the fertile ages, and by discouraging interbreeding. The cure of sterility has from time immemorial been variously attempted. In modern times it has reached great dimensions. The prevalent method is founded on the theory that in most cases sterility arises from impediments in the way of the spermatozoa reaching the ova. Strictures are said to exist; versions and flexions are held to distort the cervical canal, etc., etc. This theory of mechanical obstruction is, however, gradually giving way to another, implying that sterility is due to disease of the female sexual organs. Germany is the birth-place of this new theory, and Grünewaldt, of St. Petersburg, its chief exponent. These two theories, according to D., cover but a small part of sterility, not including a form of paramount importance dependent, apparently, on some inscrutable incompatibility of the parties. Such cases are not

very rare, and are instanced by women who marry successively, within child-bearing limits, three men, and have children by but one of them, or by men who marry successively three childless widows, and have children by each of them.

The most important means of curing sterility or relative sterility is improvement of the general health. In the case of plants, the value of digging about and dunging is well known; in animals, too, the influence of general health may be noted. There is strong evidence that fatness in women has an injurious influence on fertility. Removal of fat by diet and exercise may, hence, tend to cure sterility. No disease, local or presumably so, has such importance in the theory of sterility as spasmodic dysmenorrhea. This dysmenorrhea is not due to obstruction, but to a rigid state of the cervix. Dilatation by bougies will cure this dysmenorrhea and, at the same time overcoming the rigidity of the cervix, will enable it to open during coitus, and thus render impregnation more probable. Entirely too much stress has been laid on the evil effects which catarrh of the cervix, "ulceration of the neck of the womb," versions, and flexions have on fertility. There is not the least evidence that catarrh has any special influence in preventing conception; on the contrary, both conception and natural pregnancy are extremely common during its continuance. The great mass of versions and flexions, too, are simply conditions of health in no wise affecting conception. Finally, attention need only be called to the importance of curing those affections which prevent the commencement of pregnancy or render such commencement difficult or impossible.

E. H. GRANDIN.

**21. Tauffer: Contribution to the Literature of Castration in Women, Together with a Table of Twelve Cases** (*Zeitsch. f. Geb. u. Gyn.*, Band IX., 1).—The author states the views of Battey and of Hegar as to the feasibility and value of the operation, discusses its present status, and announces that he is very favorably disposed towards it. He gives detailed histories of his twelve cases, and announces the following propositions: 1. With appropriate precautions, the operation is not attended with great danger. The unavoidable mortality is now reduced to less than ten per cent. 2. The operation should be done with antiseptic precautions, and under the carbolic acid spray; the abdominal cavity should be closed; drainage is necessary only in exceptional cases. 3. The limitation, that the operation is not indicated if the patient is near the climacteric, can only be accepted conditionally, since the absolute time at which this will occur cannot be foretold in a given case. 4. The condition which has been proposed by Hegar, that palpation of the ovaries must be possible, if extirpation is to be done, is impracticable. 5. The double operation should always be performed, even when the disease is confined to one ovary, excepting in cases in which peculiar circumstances demand the retention of the second undiseased ovary. 6. If the tubes show the slightest evidence of disease, they should also be removed. 7. Hystero-epilepsy is curable by castration. 8. The symptoms which are collectively known as hysteria are often attributable to ovarian disease. 9. The question as to the influence which ligation of large nutrient vessels will exercise upon uterine fibro-myomata without castration is well worth consideration. 10. As to prognosis, it is probable that the climacteric will quickly follow the operation, excepting in cases



in which inflammation has attacked contiguous organs. All such inflammations are apt to delay the climacteric. 11. The ultimate value of an operation often requires months for its decision. 12. The question, as to influence of diseases of the female genital organs upon the development of certain psychoses is an open one. 13. The same may be said of the question as to whether castration will cure such psychosis. 14. For the advancement of knowledge upon this subject, it is desirable that in contributions to the clinical literature of this subject the cases be grouped under some such plan as that which was proposed by Hegar.

AND. F. CURRIER.

**22. Fehling (Stuttgart): A Porro Operation in a Subject of Osteomalacia, with Favorable Result** (*Arch. f. Gyn.*, Band XX., Heft 3).—The author alludes to the discussion which is still unsettled as to the relative merits of the Porro operation and the old Cesarean operation. The case which is published by the author is the third which has been performed by him, two of the mothers having survived, and all of the children having been born alive. The patient whose history forms the basis of this paper became osteomalacic in or previous to her ninth pregnancy; her tenth pregnancy, she being greatly deformed, required Porro's operation. This was successfully done, and the patient made a slow but complete recovery, even improving as to the osteomalacia, and leaving no doubt in the author's mind but that this also would be recovered from. The rest of the paper is, for the most part, aimed at Säger's defence of the modified Cesarean operation. The latter admits that, of eighty-four reported Porro operations, 52.4 per cent recovered. One of the arguments for the Cesarean operation has been that it allowed of repeated pregnancies with repeated operations. The author very pertinently asks what physician would prefer this privilege of repeated operations to the removal of all possibility of any such procedure, if the patient were his own wife. He also asks what is the usual condition of the children requiring such delivery, and what their chance in the struggle for existence. The objections to both Kehrer's and Säger's modified Cesarean operations is that they are adapted only for clinics and hospitals, where there is plenty of skilled assistance, and not for the emergencies of general practice. The operation of Porro is thought to be much easier, and Müller's modification is entirely approved of, as is also Hegar's. With the uterus, the ovaries also should be removed.

A. F. C.

**23. Beumer: Cesarean Section. Anterior Median Incision. Suture of the Uterus After Dissecting Away the Peritoneum and Resecting the Muscular Tissue. Saenger's Method of Suturing the Uterus** (*Arch. f. Gyn.*, Band XX., Heft 3).—The patient upon whom the operation was performed was forty-one years of age, and this was her sixth pregnancy. Labor had begun at term, when it was ascertained that a fibroid tumor, of the size of a child's head, upon the posterior cervical wall, formed a complete barrier to its completion by the natural passage. Cystitis and suppurative pyelo-nephritis were also present. Cesarean section was performed in the manner expressed in the title, a wedge-shaped segment of muscular tissue being removed from the uterus, on either side of the wound, which was eleven centimetres long, extending from the fundus to the upper border of the lower segment of the organ. The peritoneum had been peeled back from the muscular tissue, previous to the excision,

to the extent of one centimetre, this being the width of the base of the wedge removed from either side. The wall of the uterus on either side of the wound was then covered with the excess of peritoneum, and the edges brought together, so that, from the cavity of the uterus outward, there was first decidua, and then opposing surfaces of peritoneum. The wound was closed with seven deep sutures of carbolized fish-line, which, however, did not penetrate the decidua, and four superficial sutures were added which made the wound perfectly secure. Hemorrhage was avoided by means of a rubber-tube which was fastened securely around the cervix during the operation, and which was removed after the wound was closed. The child was a healthy female, and was safely delivered. The patient survived only about thirty-six hours. The Porro operation would have been impossible in this case, on account of the fibroid which has been referred to, and which would not have allowed the operator to obtain a suitable pedicle.

A. F. C.

**24. Horwitz: Concerning the Uncontrollable Vomiting of Pregnancy** (*Ztsch. f. Gyn.*, Band IX., Heft 1).—[The author of this paper has had extensive experience in the St. Petersburg lying-in asylums, and his extensive digest of a subject so important, and so comparatively little investigated *with thoroughness*, is particularly valuable.] The author objects to the promiscuous application of the term *uncontrollable vomiting* to all cases of pregnancy in which vomiting occurs. Uncontrollable applies to a later, or secondary stage, in which there is also a series of other phenomena. Pernicious (*perniciosis*) vomiting is a more appropriate expression, or, to use the term of Guéniot, *vomitum gravidarum perniciosis*. It is common among writers upon obstetrical subjects to state that the vomiting of pregnancy belongs to the first half of that period, or that it ceases with the first perceptible movements of the fetus: but these statements are too general, therefore the author lays down the following propositions:

1. The uncontrollable vomiting of pregnancy begins most frequently between the tenth and eleventh weeks.
2. It seldom comes without premonition.
3. A series of phenomena pertaining to the digestive apparatus usually precedes, most noteworthy of which is nausea.
4. Nausea is apt to begin in the third or fourth week of pregnancy.
5. There is a fixed relation between the nausea and the vomiting of the pregnant state, the longer the one, the shorter the other, usually.
6. As to severity: the severer the attack of nausea, the shorter the duration of the period of vomiting.
7. Ordinarily, vomiting of the pregnant is not similar to that which occurs in the different diseases of the stomach. The former comes on easily and without pain.

Other terms which have been given to this disease are unconscious vomiting, *hyperemesis gravidarum*, *vomisements incoercibles*.

The clinical symptoms may be divided into two periods: 1, when the phenomena begin to develop, but are not yet pronounced; 2, when they are established and threatening. Soon after the vomiting is established, loss of appetite and repugnance to ordinary food appear; salivation is also a not unusual symptom. Another symptom which, according to the author, has never before been alluded to or described, is *hyperosmia*

—an increased sensitiveness of the sense of smell, which manifests itself at times in reference to surrounding objects; at others in reference to the person so affected. This is a cause of nausea; it may be periodical, and disappears when vomiting comes on. The etiology and pathogenesis of this affection have not been thoroughly investigated. As to nationality, it is the author's opinion that obstinate and uncontrollable vomiting is rare in Germany, more common in England, most common in France. It has usually been thought to be more common in primiparæ, but Rosenthal holds to the contrary, especially in the case of those who have suffered from uterine troubles, dysmenorrhea in particular. The reflex irritation theory is referred to as the most generally received explanation of the cause of this form of vomiting, and the author has nothing better to offer in place of it. Hewitt's theory is that this vomiting is caused by some displacement of the uterus, either backward or forward. The author, while not denying that it may be a cause, denies that is a universal cause. His own experience has taught him this fact. As to the influence of inflammatory conditions in and around the uterus, the subject has not yet been cleared up. The prognosis depends, partly upon the duration of the vomiting, partly upon the epoch of pregnancy in which the trouble has appeared. The nearer to the beginning of pregnancy, the worse the prognosis, especially in the case of primiparæ. The author quotes Joulin as stating that the mortality in the obstinate vomiting of pregnancy is forty-four per cent. As to treatment, we are sorry to see that he can offer nothing new. He advises rest, avoidance of quick movements, especially as to the head. The subject of diet is to be settled by individual circumstances. Narcotics and alkalies, oxalate of cerium, and bismuth are well-known and approved agencies. To these may be added irritants externally, ether or chloroform by inhalation, bromide of potash, galvanism, and rectal alimentation. As a last resort, artificial abortion is to be effected. In dangerous cases, that is, cases in which life is threatened, it becomes a necessity. The method which he adopts is to rupture the membranes with a sound. He has never found it dangerous, notwithstanding objections on that score. Transfusion of blood in almost any supposable case is not considered a method which is worthy of adoption.

A. F. C.

**25. L. H. Petit: On Ileo-Vaginal Artificial Anus and Intestino-Uterine Fistulæ** (*Annales de Gynécologie*, January, February, April, May, June, and July, 1883).—The rarity of the above conditions is due to the fact that their existence depends on the occurrence of other lesions which are themselves rare. In the first place, there must occur a communication between the vagina or uterus and peritoneal cavity, and then a communication between this latter and the intestine, with formation of adhesions, which will keep the two openings indefinitely in connection. Openings from the genital organs into the peritoneum may follow some trauma or result from ulceration connected with labor, whilst the opening from the intestine into the peritoneum may be the result of various causes, amongst which are: 1. Strangulation of a portion of intestine in a uterine or vaginal rent. 2. Inflammation of vagina, uterus, or pelvis. 3. Extrauterine pregnancy, where the cyst ruptures into vagina, and the intestine becomes connected with cyst after inflammatory adhesion. 4. Ulceration following cancer. 5. Rupture of intestine contained in a



prolapsed uterus. Of the cases collected by P., the seat and connections of the fistulæ are summarized as follows:

Ileo-vaginal .....	21
Ileo-cystic vaginal .....	2
Ileo-uterine .....	9
Colo-uterine .....	2
Ceco- and ileo-uterine .....	1
Uterine (intestinal communication unknown) .....	1
Doubtful cases .....	2

Thus, of these 39 cases, the vagina was implicated 23 times, the uterus, 14, the small intestine, 31, large intestine, 3, the ileum and cecum together, 1, undetermined, 4. The form of the fistula is usually rounded or oval. Whether this fistula be uterine or vaginal, the cervix will be found hypertrophied, swollen, bleeding, and, where the uterus itself is the seat, it is hypertrophied. Solid adhesions connect the intestinal opening with the uterine or vaginal. A more or less acute angle is formed by the coil of intestine, and at its summit is the fistula. The symptoms announcing the formation vary according to its cause. The distinction is made between fistulæ arising from a uterine or vaginal rupture and those consecutive to pelvic abscess or uterine cancer. In acute strangulation, the symptoms usual in the like case elsewhere are present—great pain, bilious and fecal vomit, persistent constipation, anxious facies, etc. Death may supervene in a few hours. In most cases, the symptoms persist with lessening intensity for several days, during which time there is a fetid, gangrenous flux through the vagina and, finally, feces. After this, the state of the patient usually improves. When the fistula follows on a pelvic abscess or pelvic peritonitis, the symptoms peculiar to these affections predominate and mask those of strangulation. Dysuria often exists; diarrhea instead of, or alternating with, constipation. Whatever the cause of the fistula when once established, the local phenomena are about the same, the only difference lying in the quality and quantity of the fecal matters which have exit. When the ileum is the seat—and this is most frequently the case—the feces are liquid, tinged with bile, and contain half-digested food. Bad-smelling at first, in the course of a few days they become odorless. When the colon is the seat, the feces are more solid and less in quantity. There is in neither case a continuous flow from the vagina. The flow begins about two hours after a meal, lasts a quarter to half an hour, and then gradually ceases. Certain authors have utilized these fistulæ for determining the influence of special foods on the fecal matters. Amongst others, MacKeever determined that fried meats, beef, mutton, bread, gave immunity from any flow for nearly a whole day. Beef soup caused a stool in nearly two hours; cheese, sugared milk, and eggs in from six to eight hours; vegetables made their appearance quickly, half-digested; meat is usually entirely digested; lard not at all. Contact of this fecal matter with uterus, vagina, and vulva determines, of course, an acute inflammation of these parts. Menstruation is usually delayed. In a case of MacKeever's, the woman became pregnant whilst feces were passing through the vagina, went to term, and, as a result of the pregnancy, the fistula healed. A study of the cases reported shows that many of these fistulæ heal spon-

taneously or else as the result of cauterization. In the matter of diagnosis, the presence of intestine in the vagina, the passage of feces through it, are the main points. Specular exploration of vagina and rectum, the rectal injection of water, the quality and quantity of feces passed, are means which assist not only in the diagnosis of fistula, but also as to its probable site. As for prognosis, an analysis of the cases collected in this paper, to the number of thirty-nine, gives proof that intestino-genital fistulæ are exceedingly grave. The results are eighteen deaths, sixteen recoveries, and five remaining in *statu quo*. It is also apparent that uterine fistulæ are more fatal than vaginal. Of the former there were ten deaths and seven recoveries; of the latter, three deaths and fourteen recoveries. Of the total deaths, four were due to fistulæ following on cancer, and it is but fair to consider the cause of death here as not so much due to the fistula as to the malignant disease which caused it. Still further, in eleven cases, the fatal result may properly be ascribed to the primary affection, rather than to the secondary fistula. To note them: Hernia and gangrene of intestine, one case; hernia and strangulation in a uterine rupture, two cases; pelvic abscess, two cases; acute enteritis, followed by pelvic peritonitis, one case; rupture of uterus with escape of fetus into abdomen, followed by abscess between intestine, uterus, and abdominal wall, one case; repeated abscesses of pelvis, two cases; vaginal rupture and escape of nineteen feet of intestine, one case; extrauterine pregnancy, opening of the cyst into intestine and vagina, followed by septicemia, one case. Finally, three died as the result of operation on the fistula. The gravity of any fistula is largely due to the progressive enfeeblement of the sufferer following on the constant loss of blood, and the effects of the inflammation arising from the passage of excreta.

The treatment of these fistulæ is noted in only a few cases, either because the patients died before any treatment could be instituted, or because a spontaneous cure had resulted. At the outset, uterine fistulæ must be separated from the vaginal, when speaking of treatment, for the reason that the former are inaccessible to the hand of the surgeon, and, hence, the sole means used have been the tamponade of the cervical canal. Vaginal fistulæ, on the other hand, are readily reached by the surgeon, and their treatment is considered at length. The means at his disposal are either: 1. palliative—vaginal and rectal injections, topical applications, the tamponade, occlusion of the vulva. 2. Curative measures—cauterizations, surgical means. Certain preliminary operations often have to precede the curative, such as, section of a prolapsed coil of intestine, section or dilatation of a narrow portion of the vagina, removal of a projecting spur of tissue, the formation of an artificial ileo-rectal fistula. The final curative measures are, after gastrotomy, the union, by suture, of the intestinal opening, or denudation of the borders of the fistula followed by suture. As for intestino-uterine fistulæ, whilst most authorities have contended that they are beyond the resources of art, P. asks if it be not rational to expect a good result by acting on the hypertrophy of the uterus which always accompanies such lesions, in the hope that with the disappearance of this hypertrophy the fistulæ will heal?

(The cases accompanying this paper are all of interest, and many re-

ported at great length. It constitutes, therefore, a complete resumé of what is known of and has been accomplished on this subject.)

E. H. GRANDIN.

## ITEMS.

1. DR. THEOPHILUS PARVIN, for a number of years professor of obstetrics at Indianapolis, and recently professor of the same branch at Louisville, has been called to fill the vacancy at Jefferson Medical College, Philadelphia, caused by the resignation of Professor Ellerslie Wallace. We understand that Professor Wm. Goodell, of the University of Pennsylvania, was offered the position, but declined it, preferring to continue in the post he fills so well.

2. PROFESSOR OCTERLONY, of Louisville, has been chosen to fill the vacancy made by the removal East of Dr. Parvin.

3. PROFESSOR GERHARD LEOPOLD, of Leipzig, well known by his incomparable illustrated treatises on the Ovary and Ovulation, the Relations between Ovulation and Menstruation, the Lymphatics of the Non-pregnant Uterus, and numerous minor papers, has been called from Leipzig, where he had recently been appointed extraordinary professor, to fill the vacancy as professor and director of the Royal Institute for Midwives, at Dresden, caused by the promotion of Professor F. Winckel to the chair of obstetrics at Munich, occupied by the late Professor Hecker. Both gentlemen richly merit their promotion.

4. AMERICAN physicians who attended the clinics of Professor Spaeth, in the Royal Midwifery Wards at Vienna, from 1870-72, will hear with pleasure that the genial first-assistant during that time, Dr. Hanns von Riedel, for several years physician-in-ordinary to the Queen of Spain, has been appointed Staff Surgeon on special service in the Austrian army.



# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### PRIMARY CANCER (ENCEPHALOID) OF THE KIDNEY DURING CHILDHOOD.

BY

T. JOHNSON ALLOWAY, M.D., L.R.C.S. AND P., Edinburgh,  
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(Concluded from p. 888.)

WE come now to a very interesting, and I may say almost unique, symptom in the case; *a loud blowing systolic murmur* heard all over the tumor. This phenomenon first attracted my attention about the end of the third week of attendance, when the tumor was still hard. It continued to be audible, though gradually fading in intensity, until the tumor became soft and fluctuating, when it disappeared altogether. Its disappearance at this time was probably due to the non-transmission of sound through so extensive a semi-fluid mass, as there was certainly no evidence of the complete occlusion of the main vessel. This symptom we must regard as one of peculiar interest. To judge it from first impressions occurring to an observer not over cautious in giving an opinion, it would very probably be diagnosticated as an aneurism of one of the abdominal vessels, and I think the error would bear some fairly pardonable features in it. Ballard reports a case in Transactions of Pathological Society, 1859, in which the murmur was so loud that it was diagnosed as an aneurism of the renal artery. Bristow also reports a case (*Med. Times and Gaz.*, 1854, ii., 395) in which a similar phenomenon was present. It may be remarked, however, that in each of the above instances there was also a distinct pulsation, which could not be obtained in this case.

The direct cause of this murmur is difficult to decide upon. It may be due to direct pressure upon the aorta, or from the blood current acting upon a partially occluding thrombus situated on the wall of the vessel. If these views are correct one would expect to have this symptom more often recorded than it has been, and probably it would have been were it more carefully looked for at the beginning of the disease.

We now come to the consideration of the other distinctive symptom, *hematuria*. It will be remembered that, although the most careful investigation was made in regard to this symptom, it never occurred from first to last. This is important from the fact that the patient's illness dated from a severe fall with direct injury to the *right* loin; and that in about fifty per cent of all cases reported, hematuria was noticed at some period of the illness. In the cases which received direct violence to the part, the hemorrhage was generally noticed at the time of the accident, and lasted in some cases but a short while, and not reappearing before death. Then again it may be intermittent, appearing for a few days, disappearing, and then in a few days reappearing again. In other cases again, it does not appear until within a few weeks of death. When hematuria is noticed in the early stages, it is undoubtedly a sign of great value, and should give us food for thought; but it must not be forgotten that it is also present in other diseases of the urinary tract. It may also be present with a tumor in the left side and not be due to renal cancer, for profuse hematuria often occurs in leukæmic patients. When hematuria is absent it is thought to be due to complete occlusion of the ureter of affected kidneys, either by pressure or by extension of the disease into it. In Van Denburg's case (*AM. JOURNAL OF OBST.*, October, 1881, 993), the urine was free from blood and other abnormal ingredients throughout the entire period of disease. This case of Van Denburg's, I may remark in passing, teaches us a very important lesson in another respect, namely, the necessity for giving very guarded opinions in respect to these abdominal tumors in children. His first consultant declared emphatically that it was a case of hepatitis, "just as sure as if he had the liver in his hand." Further council decided it was a case of *non-malignant* tumor of a cystic nature. Paracentesis was performed, withdrawing six to eight ounces of albuminoid fluid.

*Hooklets of the ecchinococcus could not be found.* Again fresh council was obtained, and a larger needle used under chloroform, which resulted in the diagnosis of "multiple cystic tumor." The patient died, and at the autopsy it turned out that the liver, which was accused of being the cause of all the trouble in so many different ways, and by so many experienced diagnosticians, *was perfectly healthy*, and that that little deceiving neighbor of it, the kidney, was the organ at fault.

The reaction of the urine in my case, it will be remembered, was normal, as it generally is in these cases, except when admixed with blood, and then, as a matter of course, we get albumen. But albuminuria without hematuria is rare, pyuria and nephritis being excluded. Uremic symptoms are also exceedingly rare, for the obvious reason that, so long as the other kidney remains healthy, there can be no retention in the blood of the poisonous constituents of the urine, which it is the function of the kidneys to excrete. The urine in this case was not examined microscopically, it being well known that as an aid in the diagnosis of cancer it is of uncertain and questionable reliability. Moore records a case (*Medico-Chirg. Trans.*, xxxv.), in which he found roundish caudate cells, and in many other recorded instances of the discovery of cancer cells there is no proof of the supposed cancer elements being other than epithelial cells from the renal pelvis and ureters. Halle states that in a few instances of renal cancer, he has found deposits of uric acid as well upon discharged flocculi of cancer tissue, as upon the waste substances obtained at the autopsy. But the discovery of certain cell-forms in the urine is of no value in the diagnosis of cancer. The symptom which can only be recorded as significant is the discovery of *cancer particles with an alveolar structure*. Roberts says: "It must be remembered that cancer cells which would find their way into the urine must have come from broken down and degenerated parts of the growth, and to identify them in their changed condition is more than he has ever been able to accomplish."

A symptom very variable in its degree of intensity is *pain*. In this case it never amounted to more than that which would cause the patient to say "my belly is sore." In some cases, however, it is described as being agonizing; while in others again it has been entirely wanting until near the end. Its ab-



sence, however, is not of sufficient significance to exclude the existence of renal cancer.

Gastric symptoms are generally prominent. In this case there had been nausea and vomiting in the beginning of the disease, but after it ceased it did not return. In some cases the appetite is voracious, accompanied with increased thirst. In this case there was anorexia from the beginning to the end. There was no jaundice or tinting of the skin of any nature. No anasarca which might be expected with thrombosis of the vena cava; probably the compensatory circulation of the return blood through the extensive anastomosis formed by the superficial cutaneous veins prevented its occurrence. In remarking upon the duration of the disease, it may be said that it is much shorter in children than in adults. But it is exceedingly difficult to be definite upon this point, as the beginning of the disease cannot be fixed with certainty. In very debilitated children a few weeks may see the end, while in others, six to thirteen months. Ebstein says he has seen but one case of cancer of the kidney in a child which lasted as long as two years. It is, however, erroneous, as maintained by Walshe and Lebert, that the renal cancer runs a more rapid course than other visceral cancers. The contrary, in fact, is established, namely, that as a rule death is longer delayed in renal cancer than in primary cancer of any other internal organ. The mean duration of cancer of the pylorus, of the liver, lung, or brain is under thirteen months, or thereabout. This tolerance on the part of the kidney may be accounted for by the duplication of the organ; when one kidney becomes disabled, the other takes on a compensatory hypertrophy, and does the work of its diseased fellow. The advantage of much room being afforded the enlarging organ, in virtue of its situation, is also obvious.

As the prognosis of this disease is decidedly bad, invariably fatal, the treatment consists in the employment of such therapeutic measures as will tend to relieve distressing symptoms. I may say that the removal of cancerous kidney is a procedure which I don't think is regarded as sound by scientific surgeons. Walcott extirpated a cancerous kidney which he had taken for a hepatic cyst; the growth weighed two and a half pounds, and the patient survived the operation just two weeks.

A REVIEW OF THE METHODS IN GENERAL USE FOR THE  
MECHANICAL TREATMENT OF POTT'S DISEASE.

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BY

CHARLES F. STILLMAN, M.D.

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(Continued from page 894.)

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3. *Backward Traction*.—Upon this principle, introduced to the profession by Dr. Charles F. Taylor, in a paper read at the annual meeting of the New York State Medical Society in 1863, and printed in the Society transactions for that year, is founded the plan of curving the spine backward, thus producing an extension of the bodies of the vertebræ, relieving them to some extent of weight, and transferring it to the posterior processes.

It will be seen that this method of treatment differs materially from the three general plans already detailed, and can be applied in several distinct forms.

The backward traction position can be secured: 1st, by the plaster jacket, applied while the patient lies face downward in a hammock (Davy); or upon two boards—pelvic and sternal (Wm. S. Halsted); this constitutes *rigid fixation* of the spine in the backward traction position. 2d, with the splint of Mr. E. J. Chance, of London, by which *adjustable fixation* of the spine in the backward traction position is secured. 3d, by Dr. Taylor's lever brace, which produces *adjustable fixation* of the spine in the backward traction position, and also *forward pressure* at the seat of disease; and 4th, a lever brace, designed by the writer, which is founded upon the principle of a lever of another class, and fulfils the same indications as Dr. Taylor's, but in an increased degree, and with more comfort to the patient.

Mr. Chance's adaptable metal splint (see Fig. 25), as described by E. Noble Smith,<sup>1</sup> consists of two light metal bars passing from a pelvic belt upwards, one upon each side of the spinous processes of the vertebræ.

<sup>1</sup>The Surgery of Deformities, by E. Noble Smith. London, 1882. Page 224-226.

"These bars are bent to accord with the angle of the deformity, and they reach as high as the level of the shoulders. Fixed to the upper ends of the bars is a pad, to which are attached shoulder straps. At the angle of the deformity each bar is separated from the back by a pad. Between the angle and the pelvic belt are attached straps, which extend to an abdominal belt.

Between the projecting portion of the spine and the pelvic belt, the bars do not fit into the curve of the back, as it is not desirable to perpetuate that curve." "The spine is simply retained in a position which allows the superincumbent weight

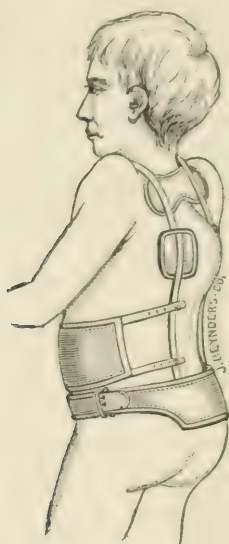


FIG. 25.—The Chance Splint.

to be borne by the posterior sound parts of the vertebræ, while the anterior diseased portion is relieved from pressure." He further states that "when the disease is situated in other than the anterior parts of the bodies, this apparatus is also valuable, because it so thoroughly fixes the spine. As the disease approaches resolution, changes in positions of the structures at the seat of disease naturally occur, and the apparatus must be modified in accordance with these alterations."

In discussing the mechanics of the subject, he says, "It has already been stated that caries of the vertebræ commonly com-



mences in the anterior parts of the vertebræ and extends backward; the transverse processes and arches are very rarely involved. Therefore, the relief of the diseased part from the superincumbent weight (which has been generally admitted to be a desirable effect of treatment) can be thoroughly effected by drawing the upper part of the spine backwards, if at the same time the lower vertebræ are restrained from bending forwards."

The lever brace of Dr. Taylor, however, aims to supplement the backward traction with correction or mitigation of the deformity by means of direct pressure upon the curvature of the spine, and he thus describes his instrument:

"In endeavoring to apply this mechanical principle (direct pressure upon the curvature of the spine) toward overcoming the pressure at the diseased portion of the spinal column, we find a happy conjunction of favoring conditions. Such an instrument is shown by Fig. 26. There is no painful pressure downward on the abdomen and hips; but a broad band passes around the trunk, low down—so low that in front it almost touches the thighs in sitting. It passes just above the pubis and entirely below the abdomen, so that the abdomen is sustained upward instead of being, as in most instruments, pressed downward. There are two pieces, or levers, passing up the back; not over the spine, but each side of it, so that it is firmly held from lateral deviations. To the upper end of these two steel bars or "levers," two curved pieces of steel are fastened diagonally to both sides of the neck, they embrace it firmly, and thus make all lateral motion impossible. The object of this arrangement is that they may pass directly forward and around the shoulder, and thus prevent a great loss of force by diagonal action; and also that they shall touch the person only where their pressure is needed—namely, on the forward part of the shoulders. This arrangement entirely obviates the painful and injurious ligaturing of the arms, which would occur if the straps passed forward from one point. At a part of the instrument, opposite the point of disease—the point where we make our fulcrum—the pads are placed. These pads are very important. They are made of chamois skin or canton flannel, and are filled with cork filings, which has no felting qualities, or, if desirable, can also be made of hard rubber. The shoulder

straps and the band around the hips are likewise provided with similar pads to protect the skin from pressure and abrasion. It will be seen that the instrument, like the spine itself, acts like a double lever with a common fulcrum at the curvature. This action is directly backward at the hips and shoulders, and directly forward at the middle of the back, or wherever the dis-

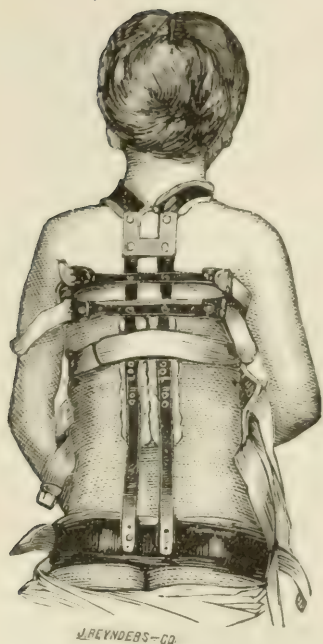


FIG. 26.

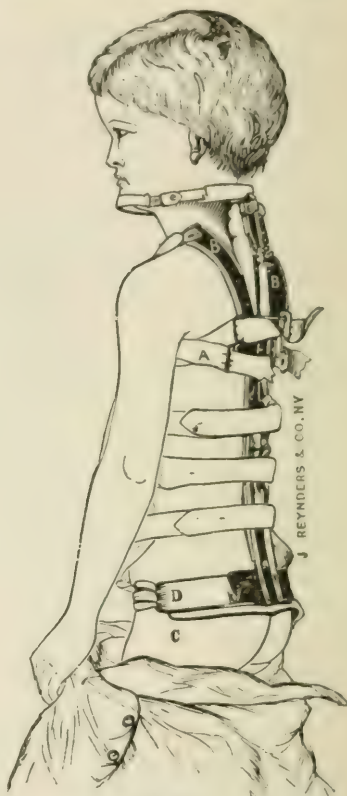


FIG. 27.

FIG. 26.—Taylor's Lever Spinal Brace.

FIG. 27.—The same, with Head-piece.

eased part is located. Thus the posterior portion, the only healthy portion of the diseased vertebræ, is made to support a part of the weight of the body, and the intervertebral cartilage and the bodies of the vertebræ, where the disease exists, are relieved of pressure.

“In addition to all this, the lower part of the body—the ab-

domen—is still further sustained in the upward direction by the apron in front which is fastened on each corner, as shown by the figures.”

“Should the disease have developed itself in the upper dorsal or cervical region of the spine, it can be treated even more effectually than when lower down. An apparatus, constructed for such cases, is shown by Fig. 28. It is like the ordinary apparatus, but with an attachment for sustaining the head. The effect and form of this attachment is that of a lever, acting backwards to raise the head and neck.”

To illustrate this principle by the knuckled rod already used when discussing the mechanics of fixation and suspension, it is placed uprightly and seized by the hands, as indicated in Fig. 28,



FIG. 28.

and the power applied to straighten out the knuckle. While this may be done, which is impossible by fixation or suspension, yet it entails the expenditure of much force, and would, therefore, in severe cases of the deformity, be necessarily attended with much disturbance of the soft parts, and, perhaps, injurious pressure, in order to obtain the necessary backward traction to arrest the disease. This has been made a point of complaint against the instrument by Dr. Sayre,<sup>1</sup> the chief advocate of suspension; but on the other hand, Dr. Taylor, in referring to suspension, says: “If a bent bar of iron is taken to a blacksmith, he would never attempt to straighten it by pulling at each end; he would simply and naturally lay each end on the anvil and apply his force in the middle. Thus he would have a force at

<sup>1</sup>L. A. Sayre: *Orthopædic Surgery and Diseases of Joints*, 1883, p. 483.



each end acting in the upward direction, and another force in the middle acting in the downward direction. Why should we not have as much regard to mechanical laws in straightening a curved spine as is used in straightening a bent piece of wood or metal?"

Dr. Shaffer, in his work on Pott's disease, already referred to, observes that antero posterior support acts scientifically upon the principle of a lever, with the fulcrum at the point of disease. The points of pressure are the pelvis, which forms the basis of support; the transverse processes of the diseased vertebræ, and those immediately contiguous to them (the fulcrum); and the anterior superior wall of the thorax and the axillæ (the resistance). A sufficient *power* is thus maintained through the medium of the two uprights of the apparatus to support the spine in the position acquired by recumbency," and in enumerating<sup>1</sup> the advantages of supports constructed upon the antero-posterior principle, he includes:

1st. "The ease with which it can be adjusted, and the great comfort experienced by patients who wear it.

2d. It can be removed with safety at any time by placing the patient in the prone position, when such modifications can be made as are necessary to the comfort of the patient or the treatment of the case.

3d. The concentration of the requisite pressure at suitable and convenient points without interfering with transpiration or respiration; and finally, the cleanliness and lightness of the whole apparatus; matters which certainly ought to be consulted in a long and necessarily tedious treatment."

(To be continued.)

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#### FIBRO-CYSTOMA OCCURRING IN PELVIS OF FEMALE INFANT; RETENTION OF URINE AND FECES.

BY  
C. DREW, M.D.,  
Jacksonville, Florida.

I HAVE heard of very few cases of retention of urine in children resulting from neoplasms. The following is a brief history of such an occurrence in a negro girl, two years old.

<sup>1</sup> N. M. Shaffer: Pott's Disease, 1879, pages 47, 48.

Fanny M., æt. two years, was noticed, on April 15th, 1882, to be suffering from tenesmus, with inability to empty the rectum or bladder. Previous to this time, she had been, as far as her friends were aware, in good health. She was brought to my office on the 18th, suffering from obstinate constipation and retention of urine, the bladder being easily felt distended above the umbilicus. She was directed to have a warm bath, warm fomentations to abdomen, and a full dose of *ol. ricini*. This having failed to give relief after a proper trial, the urine was drawn by means of a small silver catheter. This gave temporary relief, but she was brought back, in a short time, with the same symptoms. She was then ordered a mixture of opium and belladonna to relieve pain and spastic action of the urinary organs; the urine being drawn once daily, and the bowels being kept open. On the 25th, Dr. Knight saw her with me in consultation, and we concluded that there was a neoplasm pressing upon or plugging up the neck of the bladder. We noticed at this time a tumor in the right gluteal region, which, although fluctuating, we concluded did not contain pus. Convulsions ensued on the 26th, and she died on the morning of the 27th.

*Autopsy.* The body was well developed for a child of that age. A keloid growth, the size of an almond, existed on the right of the anus. This opening was somewhat distended from straining, and the mucous membrane had a rough, irregular, fissured appearance. The fluctuating mass upon right gluteal region was still evident. Upon opening the abdomen, the viscera, with the exception of the bladder, appeared healthy. This organ was distended above the umbilicus, and its walls were as thin as tissue paper. Projecting above the rudimentary uterus was a mass, apparently as large as a walnut, pressing upon the pelvic viscera. A probe passed into the vagina proved this canal to be pervious, and a finger in the rectum showed no obstruction there.

Dissecting out the tumor, it proved so large and was so firmly fixed in the pelvis that it could only be removed by cutting through the soft cartilaginous pubic bones, so as to make a free opening into the true pelvis. After removal it measured  $10\frac{1}{2}$  inches in circumference in one direction,  $6\frac{1}{2}$  inches in the other; weight,  $7\frac{1}{2}$  ounces. A considerable quantity of colloid matter had escaped in the effort to remove it, thereby considerably reducing the size and weight of the tumor. It was firmly bound to the sacrum by strong cartilaginous connections, and also apparently to the muscular structure of the gluteal region, forming the fluctuating mass which had been felt externally.

Examining the growth externally, it had somewhat the appearance of a tumor resulting from imperfect development of the vertebral column, modified by an intrinsic rather than an extrinsic life; but this was surmise, and it was much to be regretted that the sacrum and spinal column were not examined, but at that time the pathological character of the growth was

not suspected. If this was the case, the tumor was formed during fetal life, as by the ninth week of fetal existence ossification of the bodies of the sacral segments has begun. Wishing to ascertain its character, it was placed in a dilute solution of bichromate of potash, and sent to Dr. C. Heitzmann, of New York, for examination. He replied: "It is fibro-cystic, as you thought, and was evidently an outgrowth of the dura mater of the spinal cord, and afterwards separated entirely from the cord." This opinion, from an authority upon such matters, strengthened the original opinion formed from its location and macroscopic appearance, namely, that it was due to imperfect development of the sacral vertebræ during fetal life, these being slow to ossify. The spinal membranes being formed out of proportion to the ossification of the sacrum, and projecting into the pelvis, the blood supply was cut off by the gradual bony development, until the mass finally assumed an independent growth, its circulation being maintained by inflammatory adhesions to the pelvic walls and viscera. Slowly increasing in size, at the end of the second year, it interfered so seriously with important organs that death was the result. To the touch, parts of it had a firm, fibrous feel, while other parts were composed of thin walls, inclosing a semi-fluid, dirty, grayish mass. Looking over such works as come conveniently to hand, I can find no allusion to such a tumor occurring in a child of this age, or occupying such a position. Tanner, West, Smith, Reynold's System of Medicine, Niemeyer, Flint, Erichson, Dewitt, Gross, Bryant make no allusion to cases of this kind. Miller's "Surgery," 1853, says: "Other tumors may obstruct the urethra, uterine, ovarian, vaginal." The nearest approach to the subject was found in Holmes' "Surgery," chapter on the "Surgical Diseases of Childhood": "Tumors in childhood do not differ essentially from those of advanced life, but are usually of looser structure and more rapid growth. Mr. T. S. Smith points out that there is no known instance of a congenital cystic tumor on any of the limbs. They have been found on the back simulating spina bifida." This, I infer, meant that they had been found externally.



## A CASE OF INFANTILE MENSTRUATION.

BY

A. VAN DERVEER, M.D.,

Albany, N. Y.

I DESIRE to report the following case, because of its seeming rarity:

Both Mr. B. K. and his wife present a good family history, and are not related in any way. Mrs. K. was attended in her confinement by Drs. Snow and Perry of this city, yet the family is an old one of mine, especially on the father's side. I was called to see the child September, 1882, for some supposed trouble of the spine, and was quite surprised to get the following history: She is now two years and seven months old, and began a regular normal flow, lasting from four to five days, when she was four months old, and which has continued every twenty-eight days since. She weighs forty-nine pounds. Features and form that of a girl ten or twelve years old. Her mammary glands are as large as a small orange. The mons Veneris is well developed, and covered with a full growth of hair. The external labia large, and all parts of the vulva fully formed. She is bright and intelligent, but easily irritated, especially so at the beginning of the menstrual epoch. She is not allowed, nor does she seem to care, to play with children of her own age. Her appetite and tastes belong to a child much older. All functions seem to be performed normally. Has never been troubled with leucorrhea. Has never shown any disposition to handle her parts or masturbate in any way. Is, in fact, quite modest with her mother, and particularly so with her father, and when I made my examination.

Her physical condition is splendid in development, there being no disease of the spine. She plays some with her dolls. And while it is difficult for a stranger to understand her speech, yet her parents have no trouble in that direction.

December, 1882, and January and February, 1883, she did not menstruate, and in her actions was very much more fretful, and inclined to be wakeful at night. March 18th, it came on again as of old, and has been normal since, she really appearing better in her disposition. No case of the kind ever known in the family.

28 EAGLE ST., ALBANY, N. Y.

## THE VALUE OF MILK TREATED BY PANCREAS-FERMENTS.

BY

FRANCIS L. HAYNES, M.D.,

Philadelphia.

I HAVE used milk, artificially digested by pancreas-ferments, in the following cases:

1. Chronic intestinal catarrh of six months' duration in a child one year old. Marked wasting; rickets. Rapid recovery.

2. Chronic intestinal catarrh of seven months' duration in a child fifteen months old. Recovery in ten days, and rapid increase in weight.

3. Chronic gastro-intestinal catarrh (from birth), with acute catarrhal pneumonia, in a child one year old. The peptone agreed thoroughly with this patient, and the vomiting and purging ceased. The pneumonia continued, and destroyed life by exhaustion in one month.

4. Extreme emaciation and exhaustion in a child three weeks old. Rapid recovery. One month after, during very hot weather, cholera infantum and death.

5. Cholera infantum in a child two months old. The milk peptone was used as soon as the vomiting and purging had been checked. Rapid recovery.

The only other medication used in these cases was morphia to check the bowels, or to meet other indications.

In numerous cases of indigestion, intestinal catarrh, and other diseases in adults, I have used milk peptones, and frequently with benefit.

The preparation used is the "Extractum Pancreatis" made by Fairchild Bros. & Foster, 60 Fulton street, N. Y.

The following formula is used, and the druggist is directed to furnish a scoop holding a scruple of the powder:

℞ Extracti pancreatis..... 3 i.  
Sodii bicarbonatis..... 3 iij.

M. et Sig. Add scoopful to a gill of water; mix with pint of fresh milk; keep this mixture at a temperature of 110° for two hours. Boil, place while hot in bottles, and keep on ice.

In the absence of a thermometer, the mother is directed to keep the milk so hot that she can barely hold some in the mouth.

The bottles used are beer bottles, with patent air-tight rubber tops.

If the milk is to be used immediately, it is not necessary to boil and bottle it; but, if kept, it soon spoils.

Milk thus prepared has a bitter taste.

The directions for use are the same as those for ordinary milk.

The Messrs. Fairchild supply a pamphlet containing much valuable information on this subject.

280 EAST CUMBERLAND ST.

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## ABSTRACT.

**1. Ochterlony: Scarlatina** (*Amer. Jour. of Med. Sciences*, July, 1882).—In a paper read before the Kentucky State Med. Society, Prof. John A. Ochterlony, of the Med. School in Louisville, offered some points on the nature, mode of propagation, pathology and treatment of scarlatina.

That it is an acute, infectious disease all will admit. The question of its *de novo* origin has become greatly narrowed since it became known that the same disease occurs in the cat, dog, horse and hog. But what is the contagium? A series of interesting observations and studies has induced the author to subscribe entirely to the theory of Dr. Eklund, of Stockholm, that it is a minute organism, found constantly in the blood and urine of scarlatinous patients and named "*plax scindeus*." This consists of sporoidal cells, flat, oval or rounded and either colorless or yellowish-white; they have a distinct cell-wall, and a nucleus of a clear brownish color. Sometimes the nucleus contains a very minute nucleolus. As seen floating in the fluid examined they often exhibit rotatory or screwing or sawing movements. Careful study convinces the author that they are not identical with micrococci found in other diseases. "Hence it would appear as if the infectious agent in scarlatina has at last been found."

In discussing the mode of propagation of the disease, the author's conclusions as to age, sex, etc., present nothing new. He believes the most frequent method of infection is by breathing the air of a sick-room, but also thinks the disease can be carried by one person to another, etc. He maintains that the atmosphere may be contaminated by the urine of a scarlatinous patient, as this always contains *plax scindeus*. The large number of cases which arise apparently *de novo*, where no infection can be assumed, the author explains by the nature and origin of the agent of infection, the parasite, *plax scindeus*. Dr. Eklund's researches have shown that the *plax scindeus* is among the most common vegetable



parasites found in the soil, in water, on mouldy walls and mouldy wall papers. He found masses of it in the soil and water of muddy places and of the excavations dug for laying pipe. Scarletina immediately broke out among the children of a family living near these excavations. "A child falls into the mud while playing, the soiled clothes are hung to dry and are afterwards brushed and beaten within doors; soon afterward he has an attack of scarlet fever. The explanation is not doubtful. The parasite—afloat in the atmosphere with the fine dust brushed out of the clothing—has been breathed by the child, and once within the organism its irritant effects in due time declare themselves." The parasite multiplies by fission, great warmth favors the process and the interior of the body offers most favorable conditions for its growth. The author believes the most contagious period of the disease is during the height of the fever. He has not found the parasite in the desquamated epidermis and does not believe the scales to be such bearers of contagion as is commonly supposed.

In discussing the pathology of the disease, the new points offered are the explanation of the *morbid process* as due entirely to the presence of the parasite and the theories offered as to its action. It is suggested that it acts upon the nervous system, especially the vasomotor ganglia and the terminal filaments of the great sympathetic. The blood is also altered in some way by it, and the tissues must undergo some enduring change as, after one attack, they are usually not again susceptible to the action of the miasm. This requires a certain length of time for its accomplishment and this time constitutes the duration of the disease, which on the average was six and one-sixth days. This, of course, does not include the desquamation. As to pathological anatomy, no especially striking points are brought out.

Treatment.—"No specific remedy for the parasite has yet been discovered, no antidote to it found." Mild cases need no treatment, very malignant ones yield to none. The usual rules of prophylaxis by isolation and disinfection are most important, and perhaps small doses of salicylic acid may have some effect in preventing the development of the parasite. "The treatment of the patient should be based upon the consideration of his actual condition rather than upon the name of the disease." The author's suggestions are in favor especially of the cold water treatment, tonics, iron, etc. There is nothing particularly new about them, but the strong point made is that all cases cannot be treated alike, but the remedies chosen must be suited to each particular case and each form of the disease.

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ORIGINAL COMMUNICATIONS.

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NON-PUERPERAL PELVIC LYMPHADENITIS AND LYMPH-  
ANGITIS.

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BY  
PAUL F. MUNDE.

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THE existence of a fine network of lymphatic vessels surrounding the uterus, ovaries, and tubes, and intersecting the pelvic cellular tissues in all its recesses, has been well known for a number of years. The plates of Hunter, Cruveilhier, Cruikshank, Sappey, and Mascagne, recently reproduced in part by Savage, give excellent representations of this vast system of absorbent vessels in the female pelvis. These older observations were obtained chiefly through the injection of the lymphatics with metallic mercury, and were confined entirely to dissections and examinations with the naked eye. To Just Lucas Championnière, of Paris, however, and to Gerhard Leopold, of Leipzig, we owe our present very complete knowledge of the sources of and terminations of these vessels to their finest ramifications. In a very instructive monograph, entitled "Uterine Lymphatics and Uterine Lymphangitis, and the part played by Lymphangitis in Puerperal Complications and Uterine Diseases," published in 1870, Championnière discusses chiefly the pathological significance of pelvic lymphangitis in relation to puerperal diseases, and in a later publication (Uter-

ine Lymphatics and their rôle in Uterine Pathology; *Arch. de Tocologie*, 1875), he describes more fully the anatomical relations of the lymphatics in health and disease, and their connection with non-puerperal pelvic disease in the female. With these articles are given several plates, showing dilated lymphatic vessels on and about the uterus.

The minute terminations and ramifications of the lymphatics, their commencement in the mucous membrane of the uterus by innumerable clefts which ultimately join to form numerous microscopical vessels, which again unite into larger canals, and so on; the existence of this microscopical network, not only in the uterus, but equally in the tubes and ovaries and connective tissue, all of which is mentioned by Championnière, has actually been demonstrated by the plates of Leopold (*The Lymphatics of the Normal, Non-pregnant Uterus*; *Arch. f. Gyn.*, 1873), taken from specimens treated by parenchymatous injections with colored fluids. Both these observers speak of finding the larger lymphatic vessels distended in many places, supplied frequently with pouch-like dilatations (ampullæ), in which either the lymph or pus could accumulate, and Championnière particularly mentions the presence of bunches of such sacculated vessels above and behind either lateral vaginal vault. That this network of pelvic lymphatics is continuous with the lymph-spaces of the peritoneum investing the pelvic cavity, with the lymphatic vessels and glands extending along the vertebral column, and thence through the ductus thoracicus with the general circulation, goes without saying.

So far, I have spoken only of lymphatic vessels, large and small. But as with the lymphatic system in other portions of the body, so one would naturally expect to find glands scattered throughout the pelvic cavity. And in this respect, strange to say, our information is rather limited. Championnière, it is true, says that the uterine lymphatics are distributed to numerous glands (ganglia, as he calls them); those of the body of the uterus, to the broad ligaments and iliac glands, some to the lumbar glands along the utero-ovarian vessels, lying very superficially under the peritoneum; those of the cervix uteri meet at the junction of body and neck, form a plexus about the arteries and veins, and meet in several very small glands, close to the uterine border, then a larger gland occurs, and the



vessels separate into larger bundles, partly to anastomose in the cellular tissue behind the uterus with those of the opposite side, partly to accompany the utero-ovarian vessels in the broad ligament.<sup>1</sup>

The largest and most constant gland seen by Championnière was always that at the side of the cervix, above and behind the lateral vaginal pouch. From this gland he frequently observed a chain of very small glands extending to the lateral pelvic wall, and this spot, above the lateral vaginal pouch, with its one large and chain of small glands, and its plexus of large lymphatics, was most frequently the starting point of peri-uterine tenderness and inflammation.

Immediately behind the uterus, in the sparse cellular tissue underlying the peritoneum covering the posterior surface of the organ, and between the bottom of Douglas' pouch and the posterior vaginal roof, where both Championnière and Leopold found and figure numerous lymphatic vessels, no glands are mentioned by either of these observers. Leopold, indeed, seems rather to have neglected the study of the pelvic glands, having apparently devoted himself chiefly to tracing the vessels by parenchymatous injections.

The lymphatic system of the female pelvis is thus seen to consist of an immense intricate network of vessels, opening on the free surfaces of the mucous membrane lining the uterus and bladder, and on the peritoneum (and probably also in the cellular tissue), by means of innumerable minute orifices, and converging thence into larger canals with numerous peculiar pouch-like sacculations and dilatations, which cover and intersect all the organs of the pelvis, finally meeting in the still larger ducts leading to the ductus thoracicus. These tortuous canals frequently coalesce, forming ganglion-like expansions, and at intervals they are interrupted by glands, the most constant of which are found in the cellular tissue above each vagino-cervical junction, extending to the margin of the pelvis, between the layers of the broad ligaments and in the iliac fossa and on either side of the vertebral column.

It should be stated that the ovaries and tubes are equally

<sup>1</sup>Plate XII. of Savage's Atlas, taken from Cruveilhier, shows very prettily the swollen glands and distended lymphatics of a puerperal uterus and its vicinity.

well supplied with lymphatics as the uterus, but that the vaginal mucous membrane possesses a comparatively slight absorbent power. Only when the epithelium is removed or the deeper tissues are exposed, as in fresh fissures and excoriations, are the lymphatic vessels enveloping the vaginal tube laid open to external impressions.

The immense influence exerted by this lymphatic system on the nutrition and pathology of the female sexual organs cannot be overestimated. Formerly, while the functions of nutrition were credited to the lymphatics, to the veins were attributed all the pathological conditions accompanying parturition, and it was of phlebitis, phlegmon, and metro-phlebitis that we heard, never of metro-lymphangitis. Since the researches of Tonnele (1829), Nonat, Cruveilhier, Velpeau, Botrel (1845), Copland (1858), Tarnier (1857), and Virchow, Hildebrandt, Veit, and Spiegelberg among the Germans, who mostly follow the lead of Cruveilhier, the active, indeed almost essential part played by the lymphatics in the transmission of purulent and septic matter from the cavity of the uterus, *during and after parturition*, to the neighboring organs and ultimately to the general system, has been universally recognized, and all modern standard text-books now treat of inflammatory puerperal affections on this basis. How it was possible to ignore the real carriers of the pus and poison so long appears indeed strange, when every autopsy of a woman dead from puerperal metro-peritonitis shows the broad ligaments choked with pus, which oozes from every crevice when the tissues are cut into, crevices which no one could ever take for well-defined blood-vessels.

But the influence of the lymphatics in the transmission of septic matter and production of inflammation of the uterine adnexa *in the non-pregnant state* has by no means received the recognition it deserves. Gynecologists and authors have, it is true, spoken and written in a general way of the production of inflammation of the periuterine tissues, peritoneum and connective tissue, and of "sympathetic" congestion or inflammation of the ovaries, by traumatic or inflammatory irritation of the uterus. And they have treated of these secondary affections as "pelvic peritonitis" and "cellulitis" or "ovaritis," to be considered by themselves. But they have entirely omitted to

consider the relation between the primary and secondary disease and the intervening lymphatic vessels, without which the secondary disease would probably not have occurred. And what is more, they have entirely overlooked the fact that these very lymphatics, these transmitters of virus or irritation, may themselves become inflamed, and constitute a pathological condition susceptible of diagnosis and requiring treatment. Strange to say, they have not considered that what they would expect to take place anywhere else in the body, what always occurs in the skin, for instance, namely, the inflammation of the lymphatic vessels (as shown by red streaks), extending upward toward the centre, and the swelling of the glands nearest to the injured and inflamed part, would naturally occur in the female pelvic organs as well. And thus, while all authors on diseases of women speak of the metritis and endometritis, of cellulitis and peritonitis, and of ovaritis, scarcely one mentions the subject of periuterine lymphangitis or lymphadenitis. What is considered and described as one of the chief factors of puerperal disease, is wholly overlooked in the non-puerperal condition. And still we must admit that there is no reason why an inflammatory impulse or a septic infection may not be as surely transmitted from the interior of the uterus, or from the vagina, through the lymphatics, in the non-pregnant condition to the neighboring parts, as during parturition (always, of course, allowing the far greater susceptibility to absorption by the dilated vessels and hyperemic organs during the latter condition).

During the past ten years I had not unfrequently met with cases where the vaginal touch revealed an exceedingly tender, hot, and puffy parametrium, without any distinct plastic effusion or general elevation of temperature. The uterus was movable, but moving it gave pain; the ovaries were apparently somewhat swollen and tender, and the uterus itself was generally hyperplastic. I was at a loss to explain this peculiar, puffy, full feeling of the vaginal vault on any distinct pathological principles, and felt obliged to tell my students that it was a condition of serous infiltration similar to inflammatory edema elsewhere. I confess that this explanation never satisfied me, but I blindly failed to stumble on what now seems to me perfectly plain, namely, that this puffy condition was



merely a gorged state of the more or less inflamed lymphatic ducts which, as I have stated, so closely envelop the uterus.

In other cases, I noticed slight indurations on the surface of the uterus, anterior or posterior, and, perhaps, a small tender swelling, indistinctly to be felt above the vaginal vault, which I then always looked upon as small patches of plastic exudation in the cellular tissue. With all this, the uterus was invariably movable. Now I am convinced that these tender elevations were inflamed lymphatic glands.

While in this state of uncertainty, a short paper by Dr. J. S. Carreau, of New York, entitled "Adenitis and Angioleucitis of the Pelvic Cellular Tissue," met my eye in the *Medical Record* for July 2d, 1881. Dr. Carreau refers to the investigations of Leopold in order to prove the existence of an intricate and minute lymphatic system in the uterus and adnexa, and of lymphatic ganglia and irregular plexuses on the anterior and posterior surfaces of the uterus and in the broad ligaments, quotes Cruveilhier as having shown some of these ganglia filled with pus after confinement, and Courty (*Ann. de Gynécologie*, April, 1881) as describing a disease called "Periuterine Adenitis," and then reports in detail three cases under his own observation, which so closely resemble those above referred to by me, that the true character of this condition at once became clear to me. From that time on—two years—I have closely watched my patients for examples of this condition, and among a fair number (of which I made no special mention) of cases with the diffuse puffy vaginal vault referred to, I have met with six instances of as distinct and unmistakable adenitis and lymphangitis as one could wish to see. In all cases, the disease was situated behind and slightly to the side of the uterus; in four cases the uterus was freely movable; in two being fixed by old peritonitis of undoubted history; and in all cases the uterus was retroverted. Two of the patients, being hospital cases, were frequently examined by other physicians besides myself, and the diagnosis was verified over and over again. The other four were private patients, and I have no evidence but my own to support the diagnosis:

CASE I.—Mrs. W., aged thirty-six, mother of one child fourteen years of age, was referred to me in October, 1881, by Dr. E.

C. Seguin. She complained of constant sacralgia, and chiefly of a burning, aching pain in the left ovarian region, as well as of vertical headache and diffuse neuroses, for which Dr. Seguin could assign no special cause. Examination showed a greatly enlarged, retroflexed uterus, with some contraction of the left broad ligament, and in the posterior cul-de-sac, slightly to the left of the uterine border, but apparently attached to the uterus, three small nodules of the size of a bean, the extreme left one of which was movable, the two others being fixed. All were exquisitely tender to the touch, so much so that manual reposition of the uterus was for a time impracticable, and the organ could only be replaced by the sound or repositor. The ovaries were not found enlarged, although bimanual pressure on the left gave rise to considerable pain, and was followed by general nervousness and the cephalalgia referred to, for several hours. There was no history of pelvic cellulitis, and the uterus was freely movable, but immediately returned to its retroflexed position when the replacing instrument or finger was removed. This was due to the evident contraction of the left broad and sacro-uterine ligaments. As I could clearly map out the ovaries, these small tender nodules could have no connection with them. They were not exudations of "plastic lymph;" for one of them, at least, was movable, and so also was the uterus, and the contracted ligaments were not at the same time thickened. It at once occurred to me that these nodules must be inflamed lymphatic glands, and I recalled to mind Dr. Carreau's cases which I had read some months previously. Indeed, their feel was precisely like that of inguinal glands enlarged by specific infection. The external os was gaping, slightly eroded, and its margin studded with Nabothian follicles. Acting on this supposition, I proceeded to reduce the tenderness of these bodies by hot water injections, applications of tr. iodine, alone or with tr. aconite root, equal parts, to the vaginal vault and cervix, by tampons saturated in a mixture of iodoform, chloral, and glycerin, and by packing the vagina with dry cotton, repeating these applications in part every other day for several weeks until I found the swollen glands much reduced in size and the fundus uteri able to bear the pressure of the replacing fingers. Having then replaced the uterus thoroughly, I introduced an Albert Smith pessary with a bulbous posterior bar, hoping to be able to sustain the fundus, and enable the lady to do without local treatment. But in vain. Several pessaries were tried, but all soon gave rise to great pain, and became displaced by the constant dragging back of the fundus by the shortened ligaments on the left side. I therefore had to give them up, and resort again to elevating the fundus, distending the vagina, and stretching the ligaments, and relieving congestion by the gentle, steady pressure of a column of cotton tampons, which treatment was continued every other day, with occasional intermissions, for six months or longer. The patient gradually improved in general health, the uterus diminished in size, the retro-uterine tenderness disappeared, and the enlarged glands could no longer be felt, and for the last year

she has been obliged to take but little treatment. The uterus is still retroverted (no longer flexed), but gives her no inconvenience whatever. At times, however, she calls again with the same old sacralgia and left ovarian pain, and I then always find the retrometrium tender and one or more glands again palpable. A short course of the same treatment always relieves her.

It should not be omitted that an important factor in the treatment was the puncture of the Nabothian follicles, an enlargement of which was always found when the old symptoms returned.

What the exciting cause of the adenitis was in this case I cannot positively say. It may have been the irritation produced by the Nabothian follicles or the intense general hyperemia of the uterus. There was no disease of the endometrium, and menstruation (although greater pain was experienced at that time) was normal in amount and character.

[ CASE II.—Mrs. G., twenty-four years of age, nullipara, was sent to me for treatment by Dr. Denison, of Denver, Colorado. She brought with her a history of a pelvic peritonitis some four years previously (before her marriage), and of retroversion with adhesions. Her chief symptom was incessant "backache," sacralgia. I found the uterus retroverted in the first degree, immovable by the fingers, and evidently with the fundus adherent to the rectum. Behind the cervix, above the posterior cul-de-sac, were four small, somewhat movable bodies, of the size of small filberts, pressure on which gave rise to excessive pain. These same bodies could be more plainly felt through the rectum, and were not connected with or attached to the uterus. Both ovaries were normal. Specular examination showed an intense cervical catarrh. An attempt to elevate the fundus uteri by the sound produced such intense pain as to oblige me to give a hypodermic of morphine, as a result of which I was obliged to keep the lady at my house during the whole night. No other bad effects followed this experiment. My diagnosis was: *Retroversion with retro-uterine adhesions, and pelvic lymphadenitis probably induced by chronic cervical catarrh.* As all active treatment for the adhesions and catarrh was counterindicated by the excessive sensibility of the patient to such manipulation, I was obliged to confine myself to substantially the same treatment as was employed in Case I., with the addition of local galvanization, the negative pole being inserted by means of a long rectal electrode into the rectum, the positive (a large flat sponge) over the hypogastrium, ten to sixteen elements being used for twenty to thirty minutes. The benefit, from this latter treatment particularly, was most marked, the abdominal and sacral pain entirely disappeared, the retro-uterine tenderness vanished, and after about two months' treatment, the enlarged pelvic glands were scarcely perceptible. Possibly iodoform suppositories (gr. v. each), which were intro-



duced into the rectum morning and evening, had something to do with this result.

The cervical catarrh was greatly improved by very mild curetting with the sharp curette, and the repeated application of iodized phenol to the cervical cavity, these measures being as powerful as I dared employ in so susceptible a patient.

The lady returned home perfectly well so far as any pain or discomfort was concerned; the retroverted adherent uterus, of course, remained in *statu quo*.

CASE III.—Mrs. A. P., thirty-eight years, seamstress, mother of one child twelve years previously, was referred to me by Dr. G. M. Ransom, then of Richfield Springs, now of Norwich, Conn. She had been under the care of several physicians at her home for some years, with but little improvement. She complained of constant intense sacralgia, bearing-down, inability to walk or stand, dysmenorrhea and menorrhagia; she was, in fact, a confirmed invalid. I admitted her to my service at Mount Sinai Hospital, in January, 1883. Examination showed a uterus retroverted in the second degree, enormously enlarged, the sound entering three and a half inches, its tissue very hard and dense, the organ freely movable, ovaries apparently not enlarged or displaced, cervix not lacerated. Immediately behind the cervix, above the posterior vaginal pouch, were distinctly felt five very tender, movable nodules of the size of a bean, besides a number of irregular angle-worm-like masses which were equally tender to the touch.

This was the most marked instance of these peculiar nodules which I had yet seen. It was perfectly evident that they were not small fibroids on the posterior uterine surface, as they were movable, and while apparently situated under the peritoneal envelope of the uterus, they did not seem attached to that organ. When the uterus was replaced these nodules disappeared from the vaginal finger, but the worm-like masses remained.

I informed Dr. Ransom of this discovery, and he said that he had detected these small nodules, and, while ignorant of such a condition being described in the books, supposed them to be inflamed lymphatic glands. This same opinion, I afterward learned, was also held by Dr. Alfred R. Crain, of Richfield Springs, who was one of the physicians who had seen the patient before she was referred to me. During her stay in the hospital she was at my request examined by Dr. H. J. Garrigues, who happened to be present at an ovariectomy of mine, and he readily detected the condition described, but admitted that he had never felt anything of the kind before. She was also during her long stay examined by a number of practitioners who were attending the courses at the New York Polyclinic, and the same condition was easily recognized.

Dr. Ransom informed me that pessary after pessary had been tried, but that she could not bear the pressure. This, on trial, I found to be the case. I therefore began a regular course of iodine to the endometrium and vaginal vault, with cotton pack-

ing, which was kept up three times a week for about three months. Hot injections were given daily. At times she would improve, and the glands be smaller and less tender; but such improvement was only temporary. Finally I decided to try a pessary again, hoping that elevation of the uterus would also relieve the inflamed glands of the pressure the uterus was constantly exerting on them, and remove the sacralgia. But in vain; the pessary could not be borne twenty-four hours. In despair, and after several weeks' reflection and hesitation, I decided to amputate the cervix, with the view to diminishing the size of the uterus by subsequent involution, and thus reducing its weight and the pressure on the glands, perhaps also removing the source of the glandular irritation. I was well aware that by doing so I was destroying any chance of the future use of a pessary, since the removal of the cervix would leave no posterior vaginal pouch for the instrument to rest in and no fulcrum on which it could act. But as pessaries had been tried so long ineffectually, I saw no other way but to take the chance offered by reducing the size of the uterus. Accordingly, I amputated the cervix by the galvano-cautery wire, removing about one and a quarter inches close to the vaginal vault. The wound gradually cicatrized, and the result was a most gratifying one. The sacralgia disappeared before the patient was allowed to rise from her bed, the glands were scarcely perceptible, and the patient was discharged at her own request three weeks after the operation, expressing herself as feeling very much improved. Whether she will continue so remains to be seen.

In this case, I think, the enormously enlarged uterus acted as the focus of irritation to the glands.

CASE IV.—Mrs. L. L., school-teacher, æt. thirty-eight, married seventeen years; four children and four miscarriages; last delivery eight years previously. Has been ill sixteen years. Menstruation regular. Came for treatment to my class at the New York Polyclinic, on November 23d, 1882.

She complains of constant pains in the sacrum and left side of abdomen, chiefly in walking. Moderate leucorrhea. Examination revealed retroversion of the third degree, uterus considerably enlarged, length of uterine cavity 3", external os small, circular. States that she was operated on for lacerated cervix, by Dr. Skene, of Brooklyn, a year previously. Behind the cervix was felt a most peculiar state of affairs. The whole posterior surface of the uterus was studded with small, exquisitely tender, more or less movable nodules, varying in size from that of a pea to a filbert. There must have been at a rough calculation at least twenty of these little masses. Their surface was smooth, soft, but not quite regular; they were certainly not firmly attached to the uterus, and still they were not quite separated from it. They extended as far up towards the fundus as the finger could reach. Per rectum they were still more plain. The uterus was freely movable,

although reposition by the finger in the posterior pouch gave intense pain, and when replaced the nodules could no longer be felt. The condition was precisely similar to that in Case III., with the number of nodules quadrupled.

The patient was examined by my assistants and some eight or ten gentlemen who were attending the class, among whom happened to be Dr. Carreau, and all corroborated with the greatest ease the condition described. Dr. Carreau mentioned the similarity of this case to those reported by him, and had no hesitation in agreeing with me that it was a case of post-uterine lymphadenitis. It was indeed the most marked of all the cases I had seen. The patient was anxious to go West at once, where she had an offer of a position in an Iowa prairie schoolhouse, and effectual treatment was, therefore, out of the question. But at my request she called again several days later, and was again examined by a number of other gentlemen and myself, and the same condition detected. I did not see her again.

CASE V.—Mrs. S., æt. thirty-two, mother of two children; ill since birth of last child, six years previously. Was sent to me by her physician from the western part of the State. She was very much run down, suffered from menorrhagia, backache, and bearing-down; also left ovarian pain. I found retroflexion third degree, uterus enlarged, fundus very tender, slight laceration of the cervix with eversion, left ovary enlarged, tender, and prolapsed. Above the posterior vaginal pouch could plainly be felt, but chiefly on replacing the uterus, a bundle of soft, very tender freely movable cords, which I can liken to nothing better than a roll of angleworms. When the fundus was allowed to retroflex, these cords became less distinct, flattened, and appeared to be pressed towards either side. There were no nodules in this case. The dull curette showed intrauterine vegetations. I made the diagnosis of *retroflexion*, *subinvolution* (hyperplasia), *villous endometritis*, *left ovaritis*, and *retro-uterine lymphangitis*. The treatment consisted in the curette, intrauterine and vaginal applications of tr. iodine, cotton packing, hot water, and tonics; also iodoform suppositories. After about six weeks' treatment, a Cutter-Thomas bulb-stem supporter could be borne, which kept the uterus up well, and which I taught the lady to remove and reintroduce herself daily, the reinsertion being practised in the knee-breast posture. After a month's trial, it was replaced by a bulb Albert Smith pessary, and the patient is now relieved of all symptoms. But a recent examination, I confess, still showed the presence of the enlarged, although now very slightly tender, lymphatic vessels.

CASE VI.—Is that of a lady of thirty-four years, mother of one child, twelve years of age, who was sent to me last March by her physician, Dr. L. Spannhake, with a history of specific infection by her husband several years previously. She complained chiefly of a bearing-down sensation, inability to walk much, and verti-



cal headache. There were at that time no evidences of specific disease. I found a sharply retroflexed, adherent uterus (although there was no distinct history of pelvic peritonitis), which was very tender to the touch, and resisted all, even forcible intra-uterine, efforts at elevation. The left ovary was also prolapsed. Under tr. iodine to vaginal vault and cotton packing the symptoms gradually disappeared, and she experienced no discomfort from the displacement. But suddenly, a well-marked syphilitic eruption made its appearance all over her body, which in due time yielded to the proto-iodide of mercury. Chancing to make a vaginal examination one day, in order to ascertain whether the uterus was now more movable, I detected on either side of the cervix a small, bean-shaped, movable, not tender body, which certainly was not present when she first consulted me. The inguinal and cervical glands were enlarged. Doubtless the pelvic glands had participated in the systemic infection. I mention this case merely as a proof that these enlarged pelvic glands can be felt.

These six cases comprise all of which I have made careful notes, indeed they are all I have met with during the past two years, since my attention has been directed to this condition. I am confident that in previous years I must have met with a number of similar cases, which I then considered to be instances of "chronic cellulitis," the nodules being simply small deposits of "plastic lymph." Of the correctness of the diagnosis of the above cases I have no doubt whatever, as I am abundantly familiar with the various appearances and conditions found during, and remaining after, pelvic cellulitis and peritonitis; and I may as well say here what I have to say on the subject of the

*Diagnosis* of the affection which I am describing in this paper. My diagnosis of periuterine lymphadenitis is made on the shape, size, tenderness, mobility, and number of the nodules, on their relations to the uterus (not being directly connected with it, but still not entirely independent from it), on the existence of a condition of the uterus which might readily produce inflammation or enlargement of the adjacent glands (hyperplasia and retroversion in four cases, chronic cervical catarrh and retroversion, and syphilis, each in one case), the mobility of the uterus, and finally on the acknowledged presence of some lymphatic glands and numerous lymphatic vessels in the cellular tissue surrounding the supravaginal portion of the cervix uteri.

The conditions and organs with which these supposed

glands might be confounded are : 1st, plastic exudations resulting from pelvic cellulitis (perhaps peritonitis) ; 2d, subperitoneal or pediculated fibroids ; 3d, prolapsed ovaries.

1. As to inflammatory plastic exudations, they *may* assume the peculiar nodulated shape of the bodies described as glands, but they are *always* immovable and, if chronic, scarcely as tender as inflamed glands. Besides, it is highly improbable that as many as five or six or more of these plastic nodules should be found, all of similar size and shape, behind the uterus. Furthermore, when there has been peritonitis or cellulitis of sufficient intensity to leave behind exudation, the uterus is almost invariably more or less bound down, which was the case only in two of my patients, in one of whom pelvic peritonitis was known to have occurred several years previously.

2. Small subserous fibroids might be found on the posterior surface of the uterus, of the size of a filbert, and several in number ; but they are scarcely ever tender to the touch, and either not movable at all (which is usually the case), or they are very movable, almost disconnected from the uterus, when they are attached by slender pedicles. And when they are multiple, they are not likely to be confined to the posterior uterine wall. Besides, some of the nodules felt in my cases were obviously not attached to the uterus at all, but entirely to the side of that organ ; and again, one would hardly find the whole posterior surface of the uterus studded with such small fibroids, to the number of twenty or thereabout, and such fibroids would not decrease and disappear on treatment, as some of our nodules did.

3. Displaced ovaries cannot possibly be mistaken for enlarged glands, as they are larger, situated only on either side, or, if prolapsed, their absence in the normal position can be ascertained by careful bimanual palpation. They are very freely movable, or, if fixed by adhesions, can be detected by their peculiar shape, size, and absence from their normal site. While they are tender to the touch, often exceedingly so, only very firm pressure will produce decided pain, unless they are inflamed, and the pain is of a peculiar, agonizing, nauseating character, different from the acute, entirely local pain produced by pressure on another inflamed organ.

The possibility of the occurrence of pelvic lymphadenitis being admitted, it seems to me an easy matter to detect its presence. If so, why is it that authors do not mention it as occurring in the non-pregnant female? I am sure I do not know, for I cannot help thinking that it must be a very much more frequent disease than even my experience shows. Speaking with Dr. Carreau as to the paucity of the literature on the subject, in fact, so far as I knew, the absolute dearth, he referred me to the articles of Championnière, from which I have already quoted, and kindly lent me the pamphlets which I did not happen to possess. In the second article (1875) I found the following description, which is substantially identical with what I had observed and had already described to my class at the hospital and the Polyclinic as pelvic lymphadenitis:

"On different occasions, while examining women suffering from various uterine affections, I found above and behind the lateral vaginal cul-de-sac several small tumors of variable size, but slightly movable, painful, and hard. The physicians who confirmed the presence of these tumors believed them to be small fibroids, or the inflamed ovary. These fibroids, which always remained in the same spot, were not always hard; they were tender to the touch, and the patient had none of the symptoms of fibroids. As for the ovary, it is much more difficult to reach than the tumors above the cul-de-sac, and several of them had but the size of a bullet. In some women, I have felt, on a level with the superior strait, other projecting and tender tumors. The women who presented these conditions often had cervical ulcerations, were also scrofulous or phthisical. All these circumstances led me to believe that the cervix or body of the uterus, rich in lymphatic vessels, were in lymphatic or scrofulous women the point of origin of ganglionic enlargements in the neighborhood of the cervix, in the broad ligament, at the superior pelvic strait, and even higher."

My assistant, Dr. E. H. Grandin, has prepared for me the following abstract from Courty's recent edition (1883):

Periuterine adenitis and angioleucitis is often acute, and prognosis unfavorable, when it is puerperal; most frequently it is chronic, and is then less important of itself than from the ulceration of the uterine mucous membrane of which it is the certain sign. Inflammation of lymphatics in puerperal affec-



tions is common, as proved by Leopold, Championnière, and others, post mortem. In puerperal metritis, inflammation of the lymphatics is found especially in the posterior region of the uterus and near the cervix, where, according to Championnière, may be seen ganglia gorged with pus and clusters of lymph-vessels distended with this fluid, which may be taken for suppurating glands, not only on the dead subject, but even during life. Adenitis and angioleucitis, apart from the puerperal state, may result from local injury, acute metritis, ovaritis. The chronic form is likely to escape observation. Posteriorly and laterally, and at the base of the broad ligaments, Courty has often found, usually at the right posterior portion, "small rounded tumors, a little indented, smooth at certain points, irregular at others." These tumors are less voluminous than ovaries, even when the latter are not enlarged by inflammation; are usually less painful than ovaries, though at times they are excessively so; they are also less mobile than ovaries, appear to be loosely connected with the uterus, the vaginal cul-de-sac, and especially with the innermost layer extending above them. Such cases Courty has often seen post mortem. The symptoms are lumbar or lumbo-sacral pain (at times extending to the anus), dyspareunia, pain on digital touch.

In another publication (*Annales de Gynécologie*, April, 1881), Courty describes this affection in such graphic terms that I shall reproduce a portion of his article *verbatim*. He begins by saying that periuterine adenitis has been entirely overlooked hitherto. Its symptoms consist in a deep-seated pain in the pelvis, localized and limited more to one side than the other, generally the right, toward the back, near the sacrum, or rather the coccyx; this pain radiates to the rectum and anus, is excited or increased by sitting down or standing up, by coition, and by the pressure of the speculum, chiefly the Sims, on the posterior vaginal wall; further, this pain does not extend to the lumbar region or the epigastrium, and is unattended by the reflex symptoms (dyspepsia, anorexia, nausea, etc.) so commonly attending utero-ovarian disease. But the pain radiates towards the pubes and the obturator foramen, the sciatic notch and nerve. Horseback exercise, driving, defecation increase the pain. Such women have been treated for variable periods by their family physicians and others for

"chronic metritis," cellulitis, peritonitis, and ovaritis, and have usually been discharged nominally cured, although feeling themselves that they were but little, if any, improved. The physical signs, in such patients, as elicited by digital and bimanual examination, are given by Courty as follows:

"On practising the vaginal touch, especially combined with abdominal palpation, I found that pressure with the finger (or the speculum) produced pain nowhere, except toward the posterior utero-vaginal pouch, at times not even there. In seeking to move the uterus in different directions, I found its mobility, with rare exceptions, perfectly normal. On bimanual examination, grasping the uterus between the fingers of both hands and exploring the neighboring regions, right and left, no sensibility, no swelling, no displacement was observed. But continuing this examination with great minuteness, always with the idea that some pathological condition might be detected in the peri-uterine region, pushing the fingers up behind and seeking to reach the whole outline of the uterus, and depress the ovaries or the free portion of the broad ligaments, I was frequently surprised to find behind the uterus, while strongly depressing and elevating the posterior vaginal pouch, a small rounded, irregular, uneven body, varying from a pea to a bean or small nut in size, very tender to the touch, calling forth a cry of pain from the patients, who often would wince and exclaim: 'There! That is where I feel the pain!' At times, instead of one, two or three such nodules are found, always uneven, one or two perhaps somewhat larger, but rarely as large as a nut.

Searching along the sides of the uterus and forcibly depressing and steadying the lateral pouches and the uterus by the external hand, the vaginal finger readily feels one or two, rarely more, small, hard nodules, similar to those felt behind the uterus, at times on both sides, at the base of the broad ligaments, often on one side only, and then more frequently on the right. These hard nodules are uniformly rounded more or less on one portion of their surface, uneven on the rest, always separated from the vaginal wall, which slides over them, but not entirely free from attachment; they do not permit marked displacement or slip away from under the finger, like the ovary, but appear controlled by more or less lax adhesions to the fibrillated

laminated tissue, commonly called cellular, which exists between the anterior and posterior layers of the broad ligament, and occasionally seem continuous with patches of induration or incline towards the region posterior to the uterus, and even connect with the hard bodies spoken of as situated in that spot. These new nodules are, like the first, very sensitive to pressure, which always elicits a cry of pain from the patient, who seeks to avoid its repetition, and expresses herself as experiencing precisely the sensations as regards seat, direction, character, intensity of the pain, of which she complains habitually," and which I have already quoted in abstract. After reviewing the anatomical researches of Cruveilhier, Championnière, and Leopold in proof of the abundance of lymphatics in the pelvic cavity, Courty concludes that these hard nodules which are always about the same in size, number (rarely more than two or three), shape, position (behind the uterus, at the bottom of the posterior cul-de-sac as high as it can be pushed up by the finger, and above each lateral pouch in the broad ligament), which are free from any surrounding periuterine inflammation, and are tender to the touch, can be nothing else than plexiform or ampullary enlargements of the lymphatic vessels, or glands found by the anatomists behind the body and cervix of the uterus and at the base of the broad ligaments. The source of this adeno-lymphangitis he considers to be "probably the absorption by the lymphatic network of the endometrium, of inflammatory elements, chiefly of a purulent character, scattered over the surface of the inflamed mucous membrane of the uterus (as in endometritis), or of a more or less superficial ulceration following endometritis, which disease (the adeno-lymphangitis) could not be diagnosed hitherto simply because it had never been described."

Courty goes on to say that the only means of verifying the diagnosis in these cases—by post-mortem examinations—is fortunately but rarely furnished, and that for some time he was compelled to rely solely upon the evidence above related, the probable correctness of which seemed to him equivalent to a certainty. At last, chance offered him the opportunity. A patient of forty years, in whom he had on several occasions diagnosed a retro- and dextro-uterine adenitis, with chronic endometritis, died of pleuro-pneumonia. An autopsy was ob-



tained, and at the base of the right broad ligament was found a lymphatic ganglion of the size of a small shelled almond or a large bean, red, inflamed, uneven, and connected with a lymphatic vessel which showed two enlargements and separated into lymphatic vessels, which again met a latero-pelvic ganglion, the inner border of which touched two lymphatic sinuses, which, at the distance of scarcely two centimeters behind the uterus, assumed a plexiform ampullary shape and gave to the finger the sensation of nodules slightly rolling over the harder uterine surface. These ampullary dilatations appeared continuous with an intricate superficial network, and with deeper vessels, which could be traced into the muscular tissue of the uterus. The mucous membrane of the cavities of body and cervix were inflamed, granular, and here and there eroded and ulcerated.

With this confirmation of his clinical inferences, Courty thinks himself justified in adding this new disease to the other forms of pelvic inflammation (periuterine peritonitis, pelvic cellulitis, and inflammation of the broad ligaments), from which we should learn to distinguish it.

I have quoted at such length from Courty because his description, which I did not see until after all my cases here recorded had been diagnosed and the above reports written, tallied so completely with my own experience, and because I look upon this purely accidental coincidence of clinical observation as highly confirmatory of the correctness of the diagnosis. In the absence of an autopsy of one of my cases, I have no further corroborative proof.

It will have been noticed that Courty's description agrees more with my own impressions than that of Championnière, who found the nodules absolutely immovable; some were so, it is true, but the majority rolled slightly under the examining finger (precisely like inguinal glands enlarged by chronic irritation or syphilis), as though they were loosely situated in connective tissue; reposition of the displaced uterus likewise removed them more or less from the vaginal finger, and pressure through the abdominal walls rendered them more accessible. As for their tenderness, they were much more tender than a normal ovary, but less so than an inflamed ovary, and the pain from pressure on the latter is of a different character, more agonizing, depressing, lasting. The phrase which Courty puts

in the mouth of his patient when he touches the inflamed pelvic glands, happens curiously to be the identical one which I quote in my paper on Prolapse of the Ovaries (*Am. Gyn. Trans.*, iii., 1879, p. 189), in illustrating the diagnosis of that condition. The tenderness of either of these organs on pressure would, therefore, not seem to be sufficiently characteristic to be of value as a diagnostic sign.

Having made my diagnosis of periuterine lymphangitis and adenitis on purely clinical grounds, and in the absence of necroscopic confirmation, I availed myself of the only other source at my disposal, the careful monograph above referred to by my friend, Professor Leopold, of Leipzig, in search of anatomical proof. But a careful perusal failed to discover any mention of lymphatic glands in the connective tissue behind the uterus, where the nodules described by Championnière, Courty, Carreau, and myself were situated. With the view to obtaining an explanation of what seemed to me an accidental omission, I wrote to Professor Leopold, and received from him the following reply:

LEIPZIG, March 20th, 1883.

MY DEAR COLLEAGUE:—That there are on the posterior surface of the uterus, particularly beneath the peritoneum, down to the bottom of Douglas' pouch, many lymphatic vessels which may, under inflammatory conditions, become at times filled with coagulated lymph or pus, is unquestionable; I have seen such a condition many times, and have frequently injected such vessels. Whether there are also lymphatic *glands* of smaller or larger size HERE I cannot state, although they are easily distinguishable laterally from the uterus, in the parametrium. It therefore remains doubtful as yet what the nodules felt by you were, especially as, in the absence of inflammation, a chronic infiltration and marked distention of the lymphatic ducts is scarcely probable.

If small fibroids or tubercles, or lymphomatous excrescences are excluded, I should like to call your attention to the fact that, at times, the peritoneal envelope of the uterus becomes pushed into so many wrinkles and folds (especially with retroversion where the peritoneum is still more corrugated) that a number of such elevations or nodules may very readily be detected by the finger. I know that I have repeatedly ob-

served such a condition, but will not assert that this observation applies to your cases.

Miliary nodules would, I should think, point to malignancy.

Finally, it seems doubtful to me whether non-inflamed, but merely greatly distended lymphatic vessels can be palpated with such ease.

Sincerely, your friend,

LEOPOLD.

This letter was, I confess, somewhat of a damper to my theory, and would have entirely upset my clinical diagnosis, had my friend Leopold been able to refer to cases in which similar conditions to those felt by me were recognized by him, and at the autopsy the pathological changes (corrugations of peritoneum) mentioned in his letter were detected. In the absence of such proof, and with the corroborative observations of Courty especially, and others, I feel disposed to adhere to my original opinion until a post-mortem of such a case shall convince me of its fallacy.

The non-malignancy, or non-tubercular character of the nodules can be safely and positively asserted in my cases. The history and progress of the cases effectually prohibits any such supposition.

As to the *etiology* of periuterine lymphangitis and lymphadenitis in the non-puerperal state, I have already pointed out in the history of the cases that I believe areolar hyperplasia, villous endometritis, intrauterine and cervical erosion, cervical catarrh, and possibly the retention cysts known as Nabothian follicles, to be under certain (as yet undefined) conditions sufficient sources of local irritation to produce a chronic thickening of the vessels and enlargement of the glands. The "ulceration of the uterine mucous membrane," of which Courty considers the lymphadenitis and angiolenitis to be a certain sign, certainly was not present in four of my cases, neither did the patients present any evidence of the scrofulous or tubercular diathesis. That such a constitutional taint (particularly syphilis, as in my last case) would predispose to the local manifestations in question cannot be doubted.

Lacerations of the cervix with eroded, hyperplastic, and freely secreting lips, should, it seems to me, offer one of the best sources of adjacent lymphangitis; so also subacute and chronic endometritis, especially if it began acute. And it must be remem-



bered that the frequent local applications of more or less powerful caustics which constitute our mainstays in the treatment of these affections are more than liable to maintain old or induce fresh lymphatic irritation. Malignant disease of the uterus, corpus and cervix, would naturally excite a sympathetic enlargement of the parauterine glands. Unfortunately, when such cases present themselves, they have generally advanced so far, and the parametrium has become so much involved that the swollen glands are masked by the malignant infiltration of the connective tissue.

I am convinced that many of the cases of supposed obscure diffuse "chronic" cellulitis, with periuterine fulness and tenderness, but without distinct effusion, are merely instances of the present affection. Why should the female pelvic organs be exempt from a result of irritation so universally recognized and met with elsewhere in the body? And I do not consider it impossible that the peculiar obscure condition which has been described as "hyperesthesia of the pelvic peritoneum," where the uterus and perimetrium are exquisitely sensitive on bimanual examination, is nothing but a diffuse subacute peritoneal lymphangitis. But, in many cases, I believe the inflammation of the pelvic lymphatics to be an idiopathic disease, produced perhaps originally by some direct injury, as use of instruments, forcible coition, or rude examination, but not dependent on a uterine focus.

Of the *treatment*, but little remains to be said, for it is almost identical with that employed for so-called "chronic pelvic cellulitis": hot water injections, applications of tinct. iodine, iodoform, glycerin to the vaginal vault, packing the vagina with dry cotton, iodoform rectal suppositories, and the usual tonic and regulating constitutional measures. These comprise the usual routine for such cases. But in one important particular the treatment differs. While in chronic pelvic cellulitis the paramount rule would be to let the endometrium severely alone and to avoid all active intrauterine treatment which might light up fresh inflammation, in inflammation of the periuterine vessels and glands it would be one of our first duties to subdue the source of the lymphatic disturbance, and to remove as far as possible the uterine lesion upon which that disturbance depends. Hence the hyperplasia, the endometritis, the cer-

vical catarrh and laceration should be treated at once, and only after they are cured can a permanent removal of the lymphangitis be expected.

Courty lays great stress on abdominal plasters and vaginal suppositories of mercurial ointment and extract of belladonna (ungt. mere. 100, belladonna 5 parts), care being taken to avoid salivation; further, the addition of bicarbonate of soda to the hot vaginal douches; alkaline baths, iodide of potash internally or by enema, mineral laxatives, tonics, and as a finale, hydropathic treatment.

I think hot hip baths and vaginal injections of brine, such as is obtained at Kreuznach and Kissingen and can be made anywhere by adding a tablespoonful of common rock salt to a quart or more of water, would prove highly beneficial.

The points which it has been specially my purpose to make in this paper are:

1. That an inflammation of the pelvic lymphatic glands and vessels occurs in the non-puerperal state far more frequently than is generally supposed.

2. That such inflammation generally becomes chronic, and very closely simulates so-called "chronic pelvic peritonitis and cellulitis," both in its symptoms and physical properties.

3. That such lymphatics in a state of chronic inflammation possess certain characteristic features which permit their recognition by the examining finger.

4. That this inflammation may either depend on and be secondary to uterine disease, or be entirely confined to the lymphatics and be apparently idiopathic; and,

5. That the treatment resembles that of chronic pelvic inflammation, with one exception, the primary necessity for the removal of the focus of irritation, if such exist, before the lymphatic inflammation can be permanently relieved.

In closing this paper, I await with some curiosity the results of further observations on this clinically so clear, and anatomically so mysterious, affection, and hope that more attention may be paid to it, and a more careful estimate made of doubtful and obscure cases of "chronic pelvic cellulitis."

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THE DIAGNOSIS AND TREATMENT OF SUBPERITONEAL  
CYSTS OF THE OVARY.

BY

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THE literature in relation to intra-ligamentary or subperitoneal ovarian cysts is very meagre, and consists for the most part only of reports of isolated cases, in which the relations of the peritoneum to the tumor are but incidentally referred to. I know of no monographs on the subject except those of Freund and Kaltenbach, and have been able to consult these only at second hand in the systematic works of Schroeder and Olshausen. The occurrence of a case recently in my own practice has invested them with a new importance to me, the more especially that their peculiar anatomical relations seems to necessitate different operative procedures than are usual in the treatment of ordinary cysts.

I was called on the 7th of last March to treat a widow, 24 years old, who had been seized at her menstrual period with chills, fever, and agonizing pain in the hypogastric region. Married at fifteen, she had borne a living child at nineteen, and lost her husband at twenty-two. She had been pregnant but once, and had never been seriously ill until her previous monthly period, when she had had a similar but less violent attack. Her temperature was 104° F., her pulse 108 per minute. The lower part of her abdomen was swollen and tender, and her bladder irritable; there could be felt in the right iliac and the lower part of the umbilical region a well-defined tumor, which could be traced on the left as far as the brim of the pelvis. It was found on vaginal examination to lie low in the pelvis, and to occupy the recto-vaginal space, so low down that its lower edge could be easily grasped by the thumb and finger inserted respectively into the vagina and rectum. The tumor was elastic and well-defined, and a wave of fluctuation could be made to pass from its uppermost to its lowest portion. The history of the case seemed to belie the physical signs, for the patient pertinaciously insisted that she had never had any abnormal swelling before the first onset of pain in the previous month, and it was only after I had established the diagnosis by tapping, that she confessed to having consulted two surgeons about the tumor more than a year before, and to have been then advised to submit to a radical operation. Her excuse for this curious and



purposeless falsehood was that she was unwilling to admit to herself that she had a tumor, and refused to believe it. Repeated subsequent examinations showed that the tumor was deeply seated and immovable. Its upper surface was flattened, and its extension into the pelvis and recto-vaginal septum was somewhat remarkable. The uterus was pushed high up and to the left, and though of normal length, could be felt in the abdomen to lie above the pubic bone. The bladder also lay higher than usual, but was about median in situation. The tumor could not be pushed from the vaginal roof even with the patient in the knee-and-chest position.

In recording her subsequent history I shall omit all unnecessary details and emphasize only those points which have to do with the growth, as a subperitoneal tumor. After a remittent fever of three days, in which her temperature varied from 101° F. to 104° F., the fever became more intermittent in type, and there were intervals of apyrexia of several hours' duration. This condition continued unchanged for about two weeks, when I determined upon an exploratory tapping through the vagina. In excuse for this bit of bad practice, I will say that I had been made to doubt my own diagnosis by the persistently false history of the patient, and that I had come to the conclusion, from the extreme tenderness of the tumor and the obstinate occurrence of the chills and fever, that whatever the character of the swelling, suppuration had already taken place. When then the tapping resulted in the evacuation, not of pus, but of nearly pure albumen, I will confess that I was not only disappointed, but also astonished. The fluid obtained coagulated so firmly on the application of heat and nitric acid that it could not be turned out of the test tube. It contained, microscopically, only epithelial cells and granular corpuscles. This little operation was followed by the same chills and fever, neither better nor worse than before, and by the same local pains. If anything, the periods of apyrexia were longer than before the tapping—finally, taking advantage of a period of intermission of the unusual length of four days, I extirpated the tumor April 23d, 1883. There were present Drs. Webber, Reynolds, Boice, and Sommers, of Detroit, and Dr. Owen, of Ypsilanti. The cyst was found on exposure to be altogether subperitoneal—the peritoneum was stretched like a sail over a tumor as large as a man's head, which projected from the pelvic cavity towards that of the abdomen. The tube was firmly adherent to its anterior surface. There was no other ovary to be found on the right side than the tumor itself; the left ovary was normal. On puncturing the tumor, I obtained this time, not albumen, but pus, the result, undoubtedly, of my unfortunate exploratory tapping. After the evacuation of the pus, I sutured the opening made by the trocar to prevent the escape of any pus into the abdominal cavity, and proceeded to enucleate the growth. Excepting at the point of tubal adhesion, the peritoneum was everywhere loosely attached, and was readily peeled from its surface; the tube was ligated and divided; the

subperitoneal adhesions to the cecum and vermiform appendix, bladder, uterus, and rectum, were very strong and close. Low down between the rectum and cyst-wall, I found a small abscess just ready to break into the bowel. In detaching the rectal from the cystic wall just below this point, the rectum suffered a laceration to the extent of about one and a half centimetres. This rent was closed with six catgut sutures; the separation of the cyst was concluded with very little hemorrhage, notwithstanding the exercise of great force in detaching it from the uterus. The patient, near the close of the operation, seemed about to collapse, but rallied under the hypodermic injections of atropia and alcohol. At ten o'clock that evening her pulse was 100 and her temperature normal. On the next morning, however, her pulse was 120 and her temperature 102° F., and at six o'clock in the evening she died. No autopsy was permitted.

This case, in my opinion, was an example of an ovarian cyst wholly subperitoneal. It could not have been tubal, and, if parovarian, differed from all other parovarian cysts which have come to my knowledge. The absence of any other ovary on that side, and the albuminous contents rich in epithelial cells and granular corpuscles, speak for the ovarian origin of the cyst. The inner surface of the cyst was found to be covered with granulation tissue, its epithelial lining having been destroyed by suppuration. In the peritoneal sheet which covered the tumor there was no break. The cyst grew under the layers of the broad ligament, unfolding them in every direction, and finally forced its way down between the vagina and rectum.

Freund ascribes the origin of all intra-ligamentous ovarian tumors to faults of development by which the organ, wholly or in part, comes to lie beneath the broad ligament. The ovary, developing in the first weeks of life, subperitoneally, and at a point near the spine, passes to its final destination through an aperture in the peritoneum. It has normally an intra-peritoneal location, only a small portion lying within the folds of the broad ligament. It rarely fails altogether to accomplish its journey, and in most cases of faulty development passes partly into the peritoneal cavity and assumes a position in which its long axis is perpendicular instead of parallel to the tube. It is then nearer than normally to the uterus, and this mal-position is believed by Beigel to be the cause of barrenness in some women, inasmuch as the organ lies too far distant from the tubal fimbriæ. Such ovaries,

when developed into tumors, grow both within and without the peritoneal cavity. The complete failure of the ovary to pass through the peritoneum would leave it in a location near the angle of the uterus, or even touching it and adhering to it. In that case any abnormal enlargement would occur in the subperitoneal connective tissue of the broad ligaments, or down into the recto-vaginal septum. In all cases the growth of the tumor below the peritoneum is recognized by gynecologists as causing most formidable difficulties in operations by the early and intimate adhesions which the tumor forms with the other pelvic organs.

A peculiarity of the case described, to which I wish to call special attention, was its tendency to dissect apart the rectum and vagina. This would seem to be of somewhat uncommon occurrence. I have myself seen but one other similar case, and that was unique. I regret that I have very meagre notes of it.

A Mrs. Schmidt came to my office, in the summer of 1876, with an ovarian tumor which extended from a line midway between the navel and ensiform cartilage to a point low down in the recto-vaginal septum. She refused an operation, and I heard no more from her until the middle of April, 1877, when I was called to Utica, Mich., to see her at her home. I went there on April 19th and met Drs. Brownell and Knight at her bed-side. I found her to the last degree emaciated and nearly moribund. The tumor had grown to that enormous size which makes respiration nearly impossible. What seemed, however, most to annoy her was a tumor which occupied the region of the perineum, and made it difficult for her to close her thighs. I found, on examination, projected between the anus and vulva a swelling as large as the head of a new-born child. With the fingers of one hand in the rectum, and those of the other in the vagina, the distended septum could be felt, like a large fluctuating tube expanding or shrinking, according as pressure was made or relaxed on the perineal tumor. A wave of fluid could be made to pass from the perineum to the very top of the abdominal tumor.

The case was hopeless; but to relieve the symptoms of which the poor woman complained most bitterly, that is, the friction of the tumor against the thighs, I incised it freely through the middle of the perineum, and evacuated a large quantity of albuminous fluid. She received a good deal of relief from this operation, but died soon after, on April 24th. The autopsy, at which I could not be present, revealed a multilocular cyst, with extremely thin walls, and universal adhesions. The lower portion of the tumor had grown between the vagina and rectum and completely separated them. I could not learn what were the peri-



toneal relations of the tumor, but suspect that the cyst was, in part at least, subperitoneal.

I regret exceedingly that I could not have investigated this most interesting case more thoroughly, but was prevented by the distance and other unfavorable circumstances.

The case of Frau Lincke, recorded by Olshausen in his book on "Ovarian Diseases," is similar in many respects, but differs in this that the tumor, instead of distending the perineum, caused a prolapsus of the posterior vaginal wall, which projected as large as the fist through the vulva. The cyst, as far as can be determined from the record, was a thin-walled, monocular ovarian cyst. It was tapped through the vaginal portion, and four and one-half years afterwards, had only partially refilled.

Let us inquire what may be the conditions which cause a cyst to dissect its way into the recto-vaginal septum. It may, first of all, be asserted as highly probable that a wholly intra-peritoneal tumor would rarely or never take that course. The resistance offered by the peritoneum itself would be considerable, but, besides that, the pressure of an intra-peritoneal growth into Douglas' cul-de-sac would be applied disadvantageously to that end. The connections of the peritoneum to the uterus would cause a depression of that organ, whenever considerable pressure were made on the peritoneum from above. A growth beginning within the abdominal cavity, if it exerted any pressure at all downwards, would tend to force all the contents of the pelvis towards its outlet, and not to dissect them apart. A subperitoneal tumor, on the contrary, would press the peritoneum and the organs with which it is closely connected up into the abdominal cavity. If its origin were near the uterus, that organ would be forced up, and in front of, or to the side of it, and the vagina would be stretched to its utmost capacity. Here, then, we have a combination of circumstances in which the growth of the tumor would take a probable course into the recto-vaginal septum. The tumor, hemmed in above, would grow downwards, according to the law of growth, in the direction of least resistance, and the vagina held rigid and tense would be easily separated from the surrounding structures. That which could happen only exceptionally to an intra-

peritoneal growth might often and naturally occur with sub-peritoneal growths.

The influence of the character of a tumor upon these relations must not be overlooked. Of simple cysts, we may say that those of thin walls and large cavities would, when exposed to pressure, exert greater hydrostatic power than cysts of thick walls and small compartments. The fluid of a monolocular cyst, when forced into the lower part of the sac by the action of the diaphragm and abdominal muscles, would exert the same influence upon the opposing tissues that the amnion and its contents do on the neck of the uterus during labor. Olshausen's case and both of my own were evidently thin-walled cysts, which, if not all monolocular, were nevertheless composed of few and large compartments and thin walls.

Malignant or semi-malignant tumors may grow towards the perineum, in accordance, not with mechanical so much as with vital laws, not by pressing the tissues mechanically apart, but by filling the cellular interspaces with the germs of new tumors. Besides cancers and sarcomata, there is a form of papillary cystoma which invades these parts, whose origin has been ascribed by Olshausen to the parovarium, on account of their containing ciliated epithelium. Bilateral cysts of this kind, together with the uterus, were removed by Olshausen from a Frau Grosskopf. On the death of the patient, eighteen days afterwards, small cysts were found strewn everywhere in the connective tissue, under the broad ligament, and between the vagina and rectum, nearly as low down as the anus.

Those conditions which would prevent or oppose the descent of an intraligamentary cyst between the vagina and bowels are: 1st. An origin far from the uterus. 2d. Great normal resisting power of the connective tissue. 3d. The early and complete adhesion of the cyst to the vaginal roof and rectum. 4th. The inflammatory thickening excited around the tumor by the irritation of its presence. The three last conditions could only retard, but not prevent altogether, the extension of the cyst downwards if its growth took that direction.

The correct diagnosis of the intraligamentary location of cysts, before operations are resorted to, would be of great service to surgeons by enabling them to anticipate difficulties, and to choose their modes of procedures with reference to the

peculiar conditions of the case. It would not be impossible to arrive at correct conclusions in many cases if only they could be placed under observation in the early stages of their growth. Small cysts, lying deep in the pelvis, and nearly immovable, would be either intraligamentary growths, including the ordinary cysts of the broad ligament and dermoid cysts, or tubal or tubo-ovarian cysts, or cysts which have become early adherent from inflammatory processes, or sacs of intrauterine pregnancy. The peculiar shape and position of tubal and tubo-ovarian cysts and their tendency to discharge through the uterus, would serve in most cases to distinguish them. The history of previous inflammation and the inflammatory deposits still remaining would diagnosticate those ovarian growths which, originating intraperitoneally, had been made immovable by effusions of lymph from the sharply-defined and smooth intraligamentary cysts. So with abscesses and hematoceles; they form illy-defined tumors as a rule, which merge gradually into the neighboring tissue. As regards intrauterine pregnancy, the presence of many of the signs of pregnancy would call the attention of the practitioner to that possibility, and the changes which time would bring forth would soon solve all doubts in that direction. Besides their deep location and immovability, the intraligamentary cysts, when of sufficient size, would push the uterus up and to one side, and carry the bladder also up to an unusual height. Those rare cases in which the bladder has been carried in front of the tumor high up in the abdomen must have been of intraligamentary origin. At least it is difficult to conceive of such a relation of the bladder to an ordinary intraperitoneal tumor.

I think it highly probable, for reasons already advanced, that all those growths which actually dissect the rectum and vagina apart, are also of intraligamentary origin. Besides these points in diagnosis, the utter absence of a pedicle and an upper surface flattened by the resistance offered by the peritoneum to the growth upwards would serve to confirm other evidences. While examinations of small tumors do not always yield satisfactory data for a diagnosis, those of larger ones are still less decisive. The adhesions of peritoneal surfaces and the many and great changes which occur, not only in the tumor, but also in the surrounding tissues, render it ex-



tremely difficult to judge accurately of the value of symptoms, or even when occasion gives an opportunity to make careful internal investigations, to trace pathological changes back to their beginnings.

As regards treatment, all surgeons emphasize the greater danger which attends operations on intraligamentary tumors. Their adhesions are made early, and are very intimate and strong. In old cases, the separation of such attachments is often accompanied by excessive and dangerous hemorrhages. Although the bleeding in my case was slight, I met with another almost equal calamity in lacerating the rectal wall, and am disposed to attribute the septicemia which killed my patient, largely to infection from the rectum. It is difficult in many such cases to avoid wounding the thinned walls of the various viscera to which the cyst has been long attached. In deciding upon operative measures, therefore, we must bear in mind that extirpation is a much more dangerous operation than when ordinary ovarian tumors are concerned. In fact, Olshausen is so impressed with the difficulties and dangers of the operation that he forbids it in the following words: "The diagnosis of intraligamentary location may often be made, even though in other cases it may be doubtful whether the case may not be one of ordinary ovarian tumor widely adherent to the broad ligament. Where the tumor extends extraperitoneally under the floor of Douglas' pouch or even to the neighborhood of the lowest part of the rectum, where it develops out of the broad ligament far into the iliac fossa or grows with a large segment between the folds of the broad ligament, and is firmly attached to the side of the uterus, and especially where a double bilateral tumor has these relations, there extirpation should not be attempted. If the possibility of recovery may not be doubted, the chances of preserving life under such circumstances are small indeed."

That this opinion is not shared by all German surgeons, however, is shown in a recent report of A. Martin, who, among fifty-two ovariectomies, reports four intraligamentary tumors, and in all but two deaths.

Now that the propriety of extirpating ovarian tumors has been so thoroughly established by the brilliant successes of late years, surgeons are devoting themselves more and more to

the study of its limitations and to the development of new procedures for exceptional cases. There can be no doubt that some such tumors may be more successfully attacked by other means than by radical excision. I am sure in my own mind that the monocyst in this case could have been cured by incision and drainage, and should feel inclined from *a priori* considerations to lay it down as a rule for my own practice, that subperitoneal monocysts should never be extirpated. The only question in my mind as regards such tumors would be the possibility of diagnosing them before the operation had actually begun. It would seem proper in just those cases in which the descent of the tumor between the rectum and vagina makes the intraligamentary location of the growth most positive, to make an exploratory incision through the posterior vaginal wall, and thus complete the diagnosis as regards the character of the cyst, whether simple, proliferous, or dermoid, and whether loosely or closely adherent. This would be of especial advantage, too, in case the cyst should prove to be dermoid, for dermoid cysts are apt not only to have a subperitoneal position, but also to have attachments to surrounding parts of extraordinary strength. Should it seem possible after such an incision to complete the cure by drainage and local applications, the drainage could be made more thorough by making a counter-incision into the cyst above the pubis. This could be easily done without opening the peritoneal cavity through a median cut just above the pubic bone. The peritoneum may be readily detached both from the abdominal wall and the bladder, and the cyst could be opened and a curved sound passed into it through the vaginal wound. I found, indeed, in the course of the operation, that it would even have been possible to have extirpated the entire cyst without opening the abdominal cavity.

Excepting at the point of attachment to the tube, the tumor was easily dissected from its peritoneal covering, and it could have been detached from the tube itself with a little care and patience. It might be well in extirpating subperitoneal multilocular tumors to consider whether the subserous extirpation were not in some cases possible. The incision in such an attempt would have to stop short of the peritoneum, that membrane would have to be detached carefully from the abdominal

wall, bladder, and superior surface of the tumor, and then the deeper subserous attachments of the growth could be separated without a drop of blood getting into the abdominal cavity. The double incision into the vagina as well as abdominal wall would greatly facilitate the latter steps of the operation. The abdominal incisions could be made in some cases to more advantage by carrying them transversely, *i. e.*, parallel to and just above Poupart's ligament. Where the peritoneum is reflected off the bladder laterally on to the pelvic wall, there is a spot where the finger can readily detach it, and penetrate into the depths of the connective tissue. By entering at this place, it might not be necessary to interfere at all with the vesical peritoneum. It is evident that to begin the operation in this way would prove of great service in those cases where, from any cause connected with the adhesions of the tumor to the pelvic organs, the operation had to be abandoned before completion. The hemorrhage could then be checked by ligation, pressure, or the application of styptics, and the wound closed. Experience has shown that the peritoneum will heal without sloughing even after having been largely detached.

In conclusion, I will say that to those who have carefully studied the literature of ovarian tumors, it is evident that, notwithstanding its extent, it is by no means closed. We are now at the close of the first period in the history of ovariectomy, namely, that in which it has been triumphantly established as an operation of recognized merit and necessity. We have entered upon another period, in which we scrutinize carefully the established operations, and distinguish exceptional cases for which there must be established exceptional procedures. The intraligamentary tumors, especially, must be classed by themselves, studied for their own peculiarities, and treated according to the conditions which they present.

Their study has but just commenced, and the next decade will undoubtedly witness many changes both in our conception of their pathology and in our modes of treatment.

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## THE ADVANTAGE OF DRAINAGE IN SUPPURATIVE PELVIC PERITONITIS AND CELLULITIS.

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BY

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EMMET, in his admirable work entitled "Principles and Practice of Gynecology," describing the different stages and grave character of pelvic cellulitis, uses the following language: "I do not exaggerate when I claim that this disease is by far the most important one with which woman is affected. Many of the disappointments and bad results so often complained of in the management of the diseases of women, in general practice, may be attributed to the existence of unrecognized cellulitis."

So far as my own observation and experience extends, especially during the last decade, when the attention of practitioners of medicine has been particularly directed to this department of the profession, by the rapid advances made in gynecological science, I am led to accept the above declaration of Dr. Emmet as a pre-eminent and unfortunate truth. Notwithstanding the vast amount of literature upon this subject which is almost daily being spread before the professional world, supplemented and emphasized by the proceedings of active gynecological societies, the mortifying fact stated by Dr. Emmet still continues to be a matter of frequent occurrence among medical men of experience, intelligence, and fair reputations. It has not unfrequently occurred to me not only to detect such mistakes on the part of my professional brethren, but to have committed in past years similar ones myself. When called upon to confront the varied phenomena which characterize the early stages of this pathological condition, and to give an intelligent and accurate diagnosis, we too often satisfy ourselves with the belief that the difficulty exists only in the uterus or ovaries, and without taking the pains to carefully explore the vast field of connective tissue, so rich in all the essential elements of neurotic and inflammatory affections, by which these organs are surrounded, we

direct our attention exclusively to the co-existent, but often insignificant derangements of these, and fail to detect the graver and more important mischief which, if not soon arrested, must ultimately culminate in untold misery to the unhappy patient, and painful embarrassment to the physician. In venturing upon this criticism, I beg to disclaim arrogating to myself any exemption from its application, but have already confessed my liability to fall into the error referred to. Some excuse may perhaps be offered for this lack of accuracy, when we consider the inherent difficulties that surround this condition, and which the inexperienced must inevitably encounter in attempting to differentiate the many and varied maladies to which the female pelvic organs are subjected, especially when we recall the similarity of subjective symptoms which attend many of them; and whilst the numerous works on gynecology have given us minute and detailed descriptions of the symptomatology and progressive manifestations of these affections intended to enable us to correctly diagnose the one from the other, following each through the obscure and tortuous mazes of its protean character, I contend that experience alone will render the general practitioner capable of doing so. We shall no doubt continue to encounter such unfortunate mistakes, unless the entire domain of gynecology be entrusted to the care of those who make it a special study and render themselves proficient by constant practice and an enlarged experience.

The following case will serve in a great measure to illustrate both of the truths embodied in the paragraph which I have above quoted from Dr. Emmet's work :

When this lady came under my care she had been an invalid more than two years, during the latter six months of which confined to her bed. I am therefore compelled to depend for the antecedent history of her case upon her own statement, which is necessarily imperfect and lacking in scientific accuracy of comprehension and detail, but shall present it in her own language: "I am a housekeeper residing in Washington, am now thirty-two years of age; was married at the age of twenty, the mother of three living children, and enjoyed excellent health up to the time of becoming pregnant with my last child. In April, 1879, I was taken sick with no special disease, but a general feeling of prostration and some nausea, which was attributed to the existence of pregnancy; was compelled to remain in bed the greater

part of the time, from that date until July of the same year. At that time a slight uterine hemorrhage occurred, which lasted one day and night; immediately after that I began to experience pain in the lower part of the abdomen and on each side, which was increased by attempts to walk, or when I assumed the erect position. I remained in this condition with occasional abatements of pain until the 15th of November, when the pains became so much aggravated by attempts to walk, that I was forced to keep my bed, where I stayed until my confinement, which took place on January 25th, 1880. The labor was of short duration, but distressingly painful, which was attributed by the attending physician to the large size of the child. Soon after the birth of my baby, the pains in both sides of the abdomen increased so much that I was unable to move or change my position in the bed, being compelled to lie on my back entirely. During all of this time I had fever and occasional heavy sweats, was extremely nervous and unable to sleep, and had little or no appetite. About the 20th of March following, Dr. ——— was called in to consult, and decided that I was suffering from a displaced womb, and ordered hot water vaginal injections three times a day. I also took whiskey at intervals through the day, and laudanum injections at night at my own suggestion. In May the right limb began to swell, and there was a visible swelling on the right side of the abdomen near the groin, extending across to just below the navel, very tender and sore to the touch. Dr. ——— No. 2 was now called in, and after consultation an incision was made in the swelling on the right side, which was followed by the discharge of one pint of matter. On the following day, another cut was made just below the navel, and quite a quantity of matter came away. After this I felt greatly relieved. Warm poultices were kept on constantly, and a seton introduced, passing in at one cut and out at the other; this was kept in all the time and the place washed out with injections. From that time I began to get better, and by October was able to sit up and walk about. The pus continued, however, to flow from both of the cuts, and had become rather offensive. About this time Dr. ——— No. 3 was called in and removed the seton, substituting very powerful injections, which gave me great pain, but did not check the flow of matter. My general health, however, began to improve under the use of cod-liver oil and whiskey. He brought consultation Dr. ——— No. 4 to see me, who advised a continuation of the treatment. I was then ordered to the seashore, and left the city in June, 1881, for that purpose. From that date until October I was under no medical treatment, but continued to suffer with more or less pain, and discovered but little decrease in the quantity of matter discharged. I returned to the city in October, and soon after Dr. ——— No. 5 was called in as a skillful surgeon. After thorough examination, he inserted what he called a drainage tube from the left to the right side, entering at the cut place below the navel and coming out of



that in the groin; this was kept up for ten days, but in consequence of the intense suffering which it gave me, they were obliged to remove it, and injections were again used, which were repeated two or three times a week only, until the middle of November. I remained in this condition until January, 1882, when I became so much worse that I was unable to leave my bed, and continued to lose flesh and appetite, with constant fever, from this date until July, 1882, when I was told that, so far as treatment was concerned, little more could be done for me, and that I could not expect to be a well woman again.

“By the advice of friends, the sixth and last physician was sent for, who took charge of my case. What followed, of course, you know better than I do, so that it would be useless for me to continue the history of my disease any further.”

The foregoing history brings the case down to the period at which my connection with it commenced. She at that time presented a truly pitiable condition. Evidently the victim of protracted septicemia, greatly emaciated, pulse 100, temperature 101.4, extremely feeble, could with great difficulty get out of bed, appetite entirely inadequate to the necessities of a wasted system, subsisting chiefly on milk and whiskey, the latter taken in a full dose at night to obtund pain and procure sleep, she had abandoned all hopes of recovery and only sought relief from suffering during the remainder of her life. She had, however, heroically refused to take anodynes and relied on moderate quantities of whiskey as a less objectionable agent for the mitigation of pain. The abdominal surface when exposed to view presented two ulcerated openings about four inches apart, filled with pulpy granulations, one located directly in the linea alba one inch below the umbilicus; the other four inches to the right and below this about the right iliac region; from each of these openings there was a continuous discharge of fetid pus, the odor of which was perceptible throughout the apartment. A probe passed into the central opening showed that the sinus dipped directly down to the peritoneum and thence across to that in the right groin, connecting the two, being no doubt a branch of the irregular cavity ramifying through the abdominal and pelvic connective tissue and evidently the result of suppurative cellulitis and pelvic peritonitis, which had probably existed since the date of her accouchement. I found little difficulty in passing the probe from one of these openings out through the other, notwithstanding the channel or sinus seemed to pass very deep down along the surface of the peritoneum, which organ had no doubt been likewise the seat of inflammation. Explorations with a long flexible probe through the iliac opening down in the direction of the pelvic floor convinced me that the inflammatory exudation had involved the right parametric space extending in the direction of the cul-de-sac of Douglas. This conjecture was subsequently confirmed by pressing against the cul-de-sac with the index finger of the right hand and manipulating the long probe with the left: a distinct impulse

could be felt against the finger, the intervening tissues being, so far as could be determined, about an inch in thickness. Carefully exploring the pelvis through the vagina I discovered the uterus firmly fixed with its cervix down to the right side and the organ somewhat anteverted, the roof of the vagina unyielding and apparently thickened, the fornices resistant and evidently pressed upon by a proliferation of inflammatory exudation above. Having thus mapped out in my judgement a true picture of the situation, I determined to operate at once by connecting the deep-seated sinus through an opening made in the cul-de-sac of Douglas with the vaginal canal, and introduce a drainage tube through which the purulent secretions could freely escape. On the following day, assisted by Dr. N. S. Lincoln, whom I had invited to see the case with me, and who concurred entirely with the propriety of the proposed surgical procedure, we operated by passing a strong and moderately blunt-pointed probe from above down through the cul-de-sac into the cavity of the vagina, the uterus being protected by the index finger of the right hand. This opening was enlarged from below, and a well carbolized drainage tube passed through it, and carried along the vagina beyond the vulva. Little or no pus escaped at the time of operating, showing that there could have been no accumulation or large pus cavities above, which will explain why the operation was not done with a trocar. Had there been evidence of a pus-sac or serous cyst occupying this position, the trocar would have been the instrument selected instead of the somewhat novel one employed. The patient was put upon iron, cod-liver oil, and porter, and a stream of three-per-cent carbolic acid solution passed through the tube four times a day. The day following the operation she expressed herself as greatly relieved and stated that she had been freer from pain and slept better the night succeeding the operation than she had done for six months previously. She continued to improve daily under this treatment, having at the expiration of one week regained her normal temperature and pulse. At the end of two weeks, the tube becoming defective, it was replaced by a new one of smaller diameter, and the irrigation with carbolized water continued three times daily. At the end of four weeks, the discharge having diminished so materially, the tube was removed for twenty-four hours, and the fluid thrown in from above and allowed to escape through the orifice into the vagina. The following day it was again replaced and permitted to remain one week longer, when I became satisfied that the suppurating surface had been contracted to the sinus occupied by the drainage tube only. It was consequently removed, and as the patient had rapidly regained flesh and strength and presented every indication of a corresponding improvement in the condition of her blood, it was believed that the presence of the tube could only act as a foreign body and prevent the filling up by granulations of those passages. In this I was not disappointed; the orifice made by the operation in the cul-de-sac entirely closed at

the end of five days, and from this point the process of cicatrization continued until, at the end of six weeks from the date of the operation, complete closure of the passage had been accomplished. It was found that the sinus connecting the two original openings still remained unhealed and continued to discharge a small quantity of healthy and inodorous pus. This sinus had also been kept clean by constant syringing with antiseptic lotions. By a continuation of this simple mode of treatment, in two weeks more it entirely closed, completing in all respects the cure. There remained, however, an area of indurated tissue embracing the space between the original ulcers laterally, with a vertical diameter of two inches. At the end of two months this patient had gained twenty pounds in weight, was able to walk several squares, and has continued without interruption to enjoy an entire restoration to her original condition of health, strength, and weight.

Whilst the surgical operation in this case was one of easy execution and that which it would seem ought to have suggested itself to any gynecologist, when we consider the fact that among those who had seen the patient and had taken charge of her during a period of two and a half years, were several gentlemen of surgical skill and no inconsiderable gynecological pretension, it strikingly illustrates the justice of the criticism quoted from Emmet. The treatment demonstrates also to a considerable extent the golden rule, that we should, in all cases where these exudations have passed into a suppurative condition and pyogenic processes are going on within the pelvis or extending up within the abdominal cavity, not hesitate to seek the most eligible point and give the pus free exit. The disastrous effects of purulent accumulations within the system, and especially when in the large cavities of the body, such as the chest, abdomen, and pelvis, are too well understood and recognized to require demonstration; such conditions are clearly incompatible with health and in many cases with life, it is the duty then of the surgeon to lose no time in temporizing, as was done in this case, but to promptly reach the source of mischief and exhaust the vitiated fountain from which the vital fluids are being poisoned and all the consecutive and destructive stages of a wasting and slow decay are derived. This can only be accomplished by surgical methods and an efficient system of drainage.

Not only in such cases of diffused cellulo-peritonitis with suppuration do I advocate operative interference, but in all



cases of suppurative cysts located in the broad ligaments or elsewhere in the pelvic cavity, or serous accumulation in the connective tissue, when clearly ascertained by rectal or vaginal exploration, the rule should be abdominal section or puncture through the vagina and a drainage tube with antiseptic irrigation. I am not sure that this would not be a safer and more conservative procedure in those conditions of hydro- and pyosalpinx described by Mr. Lawson Tait (when in less skilful hands than his), than the plan of extirpation so successfully executed by that bold, brilliant, and beneficent surgeon. I am aware that such a distinguished gynecologist as Spencer Wells, and perhaps others, advise extirpation as the rule in suppurative cysts, but not unless the cysts be complicated with some ovarian disease or the tumor partakes of a fibroid element, would such an operation be preferable to the simpler one of drainage through the vagina when practicable. It seems clear to my mind that, in all cases where the exudative inflammation involves the connective tissue of the pelvis and is followed by suppurative accumulations within the parametrium, as so often happens, the obvious indication is to puncture through the vagina and allow the pus to escape, whilst we at the same time establish a safe and efficient mode of antiseptic ablution. The apprehension of dangerous results arising from the introduction of fluids into such a cavity has, in my judgment, no reasonable foundation; if the tissues can tolerate the toxic presence of pus, they are not likely to be injured by tepid water or medicated lotions.

I am fully persuaded that a very large proportion of women who are daily treated for uterine displacements, ovaritis, endometritis, or cervicitis, and who are thus permitted to drag along a suffering existence with temporary alleviations, are in reality the subjects of either parametritis, peritonitis, or some form of inflammatory exudation embracing greater or less areas of abdominal or pelvic space, and that in many instances these conditions, not having been recognized by the physician, ultimately develop into such cases as the one above reported, and either terminate in death, or are only recognized after the devastating and destructive advances of suppuration have presented a picture that cannot escape detection by the most inexperienced and ignorant, and when it is too

late to remedy the evil except by such surgical procedures as the ordinary practitioner would be unwilling or incompetent to perform. I may add that almost daily experience convinces me of the unsuspected frequency of this pathological condition, of the insidious character of its approach, and the difficult and tedious ordeal through which both patient and surgeon must pass, before the case is conducted to a successful issue.

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## TWO CASES OF LONG RETENTION OF THE PLACENTA AFTER ABORTION.

(ONE OF ONE HUNDRED AND FIFTEEN. THE OTHER OF SIXTY-SIX DAYS.)

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BY

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THE following cases have a practical bearing upon the question of treatment of early abortion, and well illustrate how very long a placenta may remain in utero after the fetus has been expelled, if undisturbed by proper early operative interference. I do not remember having read the report of any case where a placenta was retained so long as in either of the cases here recorded.

CASE I.—Mrs. A., colored, æt. thirty-five years, pluripara, laundress, while carrying along the street a large basket filled with clothes, almost without premonitory symptoms felt a gush of fluid from the uterus, and with it a fetus was expelled. She returned home, and several hours later I saw her. She believed herself to be in the third month of pregnancy. This was on October 25th, 1878. On making a vaginal examination, I found the cervix uteri firmly contracted, so that it was impossible to explore the uterine cavity without previous dilatation. As absolutely no pain and no hemorrhage existed, and the patient was in a very comfortable condition, I did not deem dilatation necessary, although I could not determine whether or not the placenta had been expelled.

I made four visits to the patient, the last being one week after the abortion occurred. Inclining to the belief that the placenta was still in utero, although the size of that organ was the only evidence I had upon which to found such opinion, I described to the patient the symptoms that would arise in case the placenta

commenced to decompose, and enjoined her to send for me, should any hemorrhage or offensiveness of the discharges set in.

The first call I received from the case was in the night of January 31st, 1879, which was ninety-nine days after the abortion had occurred. Rather free hemorrhage from the uterus had set in.

From the patient I learned that, during this intervening time, she had been employed at her accustomed work, although never in very good health. She had occasionally lost a little blood from the uterus, but had not considered this a serious matter, and had never sought medical advice. Indeed, her history was one so comparatively free from uterine trouble that I dismissed the thought of a placenta being present in the uterus, and concluded that the hemorrhage was due to a diseased condition of the mucosa, the result of the abortion. The treatment was directed to the improvement of this condition. During the following two weeks, notwithstanding the treatment (curette, styptics, and stimulants locally, with ergot and tonics internally), on two occasions quite free hemorrhage occurred, which convinced me that the uterus contained something that should be removed. Introducing several laminaria tents, the cervix was well dilated, and a foreign substance was felt. With the assistance of the Drs. Bates, the patient was chloroformed, and after a protracted effort, and with great difficulty, we succeeded, with fingers, forceps, and curette, in removing a placenta that was firmly adherent over most of its surface, entirely free from odor, and which to the naked eye presented a perfectly normal appearance.

This placenta had remained in utero one hundred and fifteen days after the expulsion of the fetus, and ninety-nine days without giving rise to any symptom deemed by the patient of sufficient gravity to require the advice of a physician.

It may be interesting to note here that, during the administration of the anesthetic, the patient's respiration at one time entirely ceased, and the heart's action became extremely feeble, and artificial respiration, with complete inversion of the patient, was necessary to restore her.

Slight fever occurred after the removal of the placenta, but this continued only for several days, and convalescence was rapid. In a few weeks, menstruation was restored and continued regularly, without being too free, until pregnancy occurred, about nine or ten months after.

September 5th, 1880 (eighteen months after the removal of the placenta, as above detailed), I was summoned to see this patient, at midnight, and found her in labor. The os was dilated to the size of a silver dollar, head of child presenting, and pains only moderately active. Not anticipating a speedy termination of the case, I went to the room immediately below and slept until four A.M., when I was roused by the screams of the patient, and, on going to her immediately, found her in a condition of semi-



collapse. Pulse was rapid and very feeble, surface cold and clammy, and she was suffering most intense pains of an unusual character, while the uterus was in a state of violent tonic contraction. Death seemed imminent, and I at once sent a messenger for counsel. On making a vaginal examination, I found the os fully dilated, but the head was not resting firmly over it, but seemed to have receded, and the occiput was higher and more to the left than when I first examined the case, and the placenta was implanted low, and was distinctly felt on the right of the uterus. Dr. Bates, Sr., arrived in a few minutes, and, on examination, deemed it wise to deliver without delay, which he did by turning. The child was dead. The placenta was also delivered at once, and the uterus, after a little external manipulation, contracted well. No unusual amount of blood was lost; but, during the effort to deliver, the condition of collapse continued, and, immediately after, syncope occurred. By hypodermics of brandy and other means, consciousness was restored; but again and again the heart gave way, until it finally ceased to beat, death occurring about twenty minutes after delivery was completed.

An autopsy was not secured, and the cause of death cannot be positively given. It is an important fact in the case that the patient had been for years subject to attacks of syncope. She fainted on the slightest provocation, the sight of blood or a trivial accident to her children producing this result. The case, at the time of its occurrence, seemed to me to be one of fatal syncope, due to the unusually violent nature of the uterine contractions, the heart being weak. But was there not at least a slight rupture of the uterus due possibly to damage inflicted at the time of the removal of the long-retained placenta? If not, why the recession of the head? Why the symptoms of collapse? If so, why the long-continued violent uterine contraction?

CASE II.—Mrs. B., æt. forty, multipara, large, robust woman, gave me the following history: Last menstrual period ended June 25th, 1880. Missed the period in July, but had no other evidence of pregnancy. On August 15th, she began to waste. On Wednesday, August 17th, went to market, tarried on the street to watch a circus parade, and, while still wasting, walked rapidly home. Hemorrhage set in so profusely as to cause fainting, which occurred twice. Still no physician was called, and she continued to lose blood until the 20th, when "the waters broke," and a fetus was expelled. More or less hemorrhage continued for a week, when the woman left her bed, and, three days after, or ten days after the miscarriage, she did her week's washing. The next day, to use her own words, "blood burst from me (her) like a fountain." The "fountain" then dried up, and no wasting occurred for several days; but it continued, with intermissions, until a physician was called, who prescribed some medicine to be taken internally. Later, she was under the care of another very excellent physician, managing to perform her domestic duties, but gradually running down in health from the repeated loss of blood.

The results of the internal medication, the only kind employed, were negative. No vaginal examination was made; whether ever proposed, I did not learn.

On October 24th I first saw the patient, heard from her the above history, and expressed the opinion that a retained placenta was the cause of her hemorrhage. On examination, I found the uterus large, os patulous, and could feel a foreign body in the uterus. The cervix was not sufficiently open to allow me to operate with facility, and as the hemorrhage became very free during my manipulations, I introduced several laminaria tents, forced a large cotton ball firmly against the os, loosely tamponed the vagina, and left the patient until the next day. When I made my next visit, the tampon and tents being removed, I found the cervix well dilated, and exploring the uterine cavity, I felt a placenta which was firmly attached over the larger part of its surface. I had extemporized a curette by bending a good-sized iron wire into an oval loop of proper size, twisting the two ends for a handle, and filing the loop flat on its concave surface. With this and forceps and index-finger, I soon succeeded in removing the whole of the placenta, which, as in the other case, was entirely free from odor, and apparently normal in character. The hemorrhage immediately ceased. The uterus was washed out with hot carbolized water, and an uninterrupted convalescence resulted, the patient's general condition, which had become considerably reduced by the oft-repeated hemorrhages, rapidly improving.

In this case, the placenta remained in utero sixty-six days after the expulsion of the fetus. From the size of the placenta, it was evident that the patient gave the date of her last menstrual period one month too late, unless it occurred after conception.

In less than four months after the removal of the placenta, this patient again became pregnant, went to full term, and on November 9th, 1882, I delivered her of a healthy child, after an easy and normal labor, and she still remains in excellent health.

[The deterioration of health, firm attachment of the placenta, and final necessity for removing it instrumentally, in both these cases, seem to us the best corroborative evidence in favor of immediate removal of the placenta after every abortion. That the placenta was firmly attached in these two cases was fortunate, as the decomposition of a partly detached portion would probably have soon produced septic infection.—ED.]

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REMARKS ON ACCIDENTAL RETENTION OF THE FEMALE  
CATHETER.

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BY

MALCOLM McLEAN, M.D.,

New York.

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THE accidental retention of the silver catheter in the female urethra or bladder is of sufficiently frequent occurrence and of enough consequence to warrant a few remarks suggested by the cases reported in the June and September numbers of the JOURNAL OF OBSTETRICS by Drs. Allen and Rooney.

Those who have practised catheterization with the ordinary silver catheter must have observed that it is exceedingly liable to become engaged, somehow, in the neck of the bladder or vesical end of the urethra. In attempting to withdraw the instrument it seems to be, and *is*, grasped more firmly, and considerable force would be required to overcome it. In a certain number of cases relaxation takes place and the catheter is released, so that it may be removed without violence, if the patient's attention is attracted to some other matter.

In other cases relaxation never takes place, but the instrument is held in a firm, elastic grasp, which cannot be overcome without violence to the mucous membrane, unless the proper means be taken to release it.

To this second class Dr. Allen's case belongs, and in these cases there is a prolapse or hernia, so to speak, of the vesical or urethral mucous membrane through the large eye of the catheter. Once forced into the instrument, the tissue swells and becomes fixed, so that laceration is almost sure to follow any considerable traction or twisting of the metal tube. Fissures of the bladder and urethra are doubtless sometimes produced in this manner, and urethritis is a frequent sequel to careless catheterization.

The faulty shape, size and location of the openings in the ordinary silver instrument contribute largely to the accident in both varieties. In the first class the neck of the bladder gets spasmodically contracted around the portion of the catheter which is very much diminished in calibre by the location, etc.,



of the eyelets; while in the second class the *mucous membrane gets forced through* one or both openings.

The well-known method of having the catheter made with numerous small round openings is generally a safeguard against the accident we are considering. And if we are careful to *shut off the flow of urine* with the finger over the external extremity of the instrument *just before* we begin to remove it we will seldom be troubled.

But the accident *may* happen to any of us, and then what is the best course to pursue? There is a simple method by which we may *always* succeed in disengaging the parts concerned in retaining the catheter, and it will not fail if properly carried out.

Placing the nozzle of almost any syringe against the extremity of the catheter and injecting a small quantity of *cold water* will drive out the mucous membrane, so that the instrument will readily slip out at the same instant. Forcing *air* into the canal *will not do*, and should not be used as a substitute for water.

SEPTEMBER 11th, 1883.

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NOTE ON DELIVERY OF THE AFTER-COMING HEAD BY THE OCCIPUT.

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BY  
WM. WOTKYNs SEYMOUR, M.D.  
Troy, New York.

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RARELY does one find in obstetric writers a better illustration of the want of appreciation of the methods of the artificial delivery of the after-coming head than is shown in Charpentier, "Traité Pratique des Accouchements," Paris, 1883, which came to hand since the publication of my article. In volume I., page 404, 2°, the author recognizes that when the occiput is posterior and head is well flexed labor can be terminated spontaneously; the head being delivered in succession by the SOM, SOF and SOB diameters, the occiput coming last.

Also in 3° he recognizes that in a normal pelvis delivery is possible when the occiput is posterior and the chin anterior and

head well extended; the face in this case being delivered last. Yet when he comes to manual and instrumental delivery in vol. II., pag. 559, he says of the case where the occiput is posterior and head flexed: "3° L'occiput est en arrière, mais la tête est fléchie. Le dégagement, dans ces cas, est à peu de chose près aussi simple que lorsque l'occiput est en avant, et la tête fléchie. Il suffit de relever fortement le tronc du fœtus, en ramenant son plan antérieur vers le plan antérieur de la femme. On dégage donc VENTRE CONTRE VENTRE; seulement l'occiput se dégageant en arrière, il faut surveiller avec plus d'attention encore le périnée, qui court plus de dangers."

Thus, instead of carrying the child back over the mother's back and delivering by the favorable diameters of the head, the SOM, SOF, and SOB, he would carry the child's body over on to the mother's belly and deliver by the diameters SO and OF. Now my measurements of a large number of heads show that the occipito-frontal is from  $\frac{1}{2}$  to 1 inch longer than the sub-occipito frontal; besides the arch, by not allowing the broad forehead to rise far in it, would require the difference between the occipito-frontal and the more favorable sub-occipito-frontal to be taken out of the perineum. *By carrying back to back*, the arch is in a great measure avoided, and a much more favorable diameter engaged.

Of the case where the occiput is posterior, but the head is extended, he says: "4° L'occiput est en arrière, et la tête est défléchie. Dans ce cas, le menton se trouve plus ou moins fixé sur le pubis, et tirer sur le tronc avant de l'avoir abaissé, ne ferait que compliquer la situation. On ne peut faire basculer le menton, tant que la tête se trouve ainsi dans le diamètre antero-postérieur du bassin. Il faut donc, avant de déterminer la flexion, faire exécuter à la tête son mouvement de rotation. Pour nous, la seule manière d'avoir un enfant vivant, est d'appliquer le forceps de faire exécuter artificiellement à la tête son mouvement de rotation, et de dégager aussi rapidement que possible."

Here, as I showed in my recent paper, flexion and rotation is not only needless, but also harmful, from necessitating a loss of time. But traction upon shoulders and carrying the child over the mother's abdomen will deliver speedily, or if there is necessity, the fingers in the rectum hooked over the fore-

head, or the forceps will execute it promptly. In short, his treatment for cases in 3° is the proper treatment for the cases in 4° and none other, and the treatment recommended for the cases in 4° has no excuse for its employment.

With regard to the delivery of the after-coming head, occiput anterior and chin extended, by direct downward traction upon the shoulders, and carrying then the belly of the child over the mother's back, as I first suggested, I am glad to be able to cite a successful case of its employment by my friend, Dr. Magee, of Lansingburgh, N. Y.

Patient primipara, thirty-seven years old, presentation of breech—back anterior, four hours after rupture of membranes and ten after beginning of labor, fetus delivered save head—cord pulsating feebly, body livid, head so extended that flexion could not quickly be produced. Dr. M., recalling my recommendation, *made traction upon the shoulders and carried the child's belly over on to mother's back and delivered a living child.* "The perineum was not torn more than in the majority of primiparæ."

I am particularly glad to be able to report this last case, for it is a practical demonstration that in many cases life can be saved, when the occiput is anterior and chin extended, by traction upon shoulders and carrying the child's belly over mother's back; when, were flexion to be attempted, and time thus lost, the child would die. So far as I know, this is the first case in which the procedure I was the first, on theoretical grounds, to suggest, was put in practice.

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## CORRESPONDENCE.

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### ABSORBENT COTTON AS A DRESSING FOR THE UMBILICAL CORD.

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TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

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SIR:—About a year ago, at a case of confinement, there being no cloth convenient suitable to dress the cord, a woman in attendance suggested the use of the absorbent cotton she saw in my satchel. I quickly took up her suggestion, putting a good pad of the cotton in place. In four days, the cord came off clean; there was neither smell nor irritation. The cord was only dressed once. Since then, I have used it in a number of cases. In the



Christian Home, a home for unfortunate girls, I have used it a number, eight or ten, times. I have quite a pad of the cotton placed around the cord, without grease of any kind, and do not allow it to be disturbed at all. In from three to four days, the cord comes off, leaving the navel in the best condition. I have not had in a single case the slightest irritation or redness, nor granulations. I hope those who have not, will give it a trial. It will, in a number of cases, especially where you have awkward nurses, I think, prevent umbilical hernia. It prevents pulling on the cord, which is apt to occur when cloth is used. It gives equal and gentle pressure, and keeps the parts sweet and clean. There was not the slightest odor in any case. Yours truly,

W. D. BABCOCK, M.D.

EVANSVILLE, IND.,  
August 1st, 1883.

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#### A CASE OF SUPERFETATION IN A CAT.

TO THE EDITOR OF THE JOURNAL OF OBSTETRICS.

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DEAR DOCTOR:—The following may be interesting to you as bearing upon the question of superfetation:

My children have an old cat to which they are fondly attached. Yesterday, while they were playing with her, she gave evidence of being in labor, and they were directed to take her to the stable, and return to the house at once. A little eight-year-old came in to me with the report that the cat "had swallowed a kitten. She saw it in her mouth." Becoming interested in the case, I went to the stable, and found one kitten evidently very recently born. While I watched, evidences of a labor-pain were present, and something was expelled from the vagina which, supposing it to be a placenta, I picked up to examine. This proved to be a sac about the size of a hulled walnut, and one-eighth to one-sixth inch in thickness, lacerated at one side. From it protruded two cysts, one (the smaller) containing transparent fluid only, and the other transparent fluid and an immature fetus three-quarters inch in length, with ears, eyes, legs, and tail plainly visible. About fifteen minutes later, a second fully-developed kitten was expelled, and how many more afterwards I do not know, as my investigations here ended.

Glancing at it for a minute, I threw it away, and afterwards, becoming more interested, I found it in the hay, but the cysts were broken, and the relation of the parts so disturbed that I can give no more accurate description than the above. Not being

versed in feline embryology, I do not know that this is a unique case, but it seems to me to be quite interesting. It is certainly not a case of arrested development from compression, as the sac (decidua?) was round and healthy-looking, and the amnion contained quite a quantity of fluid in which the fetus floated. The fetus I preserved, and it is at the disposal of any of your friends of an investigating turn of mind. Am sorry I did not preserve the whole. Very sincerely,

S. L. JEPSON, M.D.

WHEELING, W. VA.,

August 5th, 1883.

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#### A CASE OF TRUE REMITTENT FEVER DURING THE PUERPERAL STATE.

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DEAR DR. MUNDE:—Apropos of Dr. J. Lewis Smith's case of Pernicious Remittent Fever and Dr. F. Haynes' reply, I send you the history of a recent case of mine, which you may, if you think it interesting, insert in the AM. JOURN. OF OBST.

With my kind regards, I am, yours truly,

A. CORDES.

Mrs. H., IVpara, was delivered by me by version—a very easy one, lasting only ten minutes—on June 30th last, at half-past five A.M. Delivery of the placenta normal. Being obliged to leave town for an urgent ovariectomy at a great distance, I gave up my patient to a medical friend.

When returning on July the 7th, I heard that she had offensive lochia and high fever every second day, in the afternoon, since the second day after her confinement. As she suckled her child, I was afraid to give her quinine, but, seeing the fever coming again, with chill, hot skin, perspiration, and the aconite not acting well, I decided to put her on this remedy, forbidding to give the breast less than eight hours after taking the quinine.

The first dose, 25 centigrams, prevented the fever on the 11th; it came only on the 12th, very attenuated, after a second dose of quinine.

12th; slight fever at night, *without chill*.

She never had nausea or vomiting. Since then, Mrs. H. went on better and better, except that she remained weaker than after her preceding confinements.

Now I believe this was a true case of remittent fever, not of puerperal character. During the intervals, Mrs. H. was all right, except weakness, the fever was of a very genuine periodical

character, the milk did not stop, the abdomen was never very tender; the fever was cut short by quinine. The lochia were offensive for several days, it is true, but I never found, nor did my assistant, any decomposing clot in the uterus. The cause I found in some fresh excavations in the neighboring garden. This being the first time Mrs. H. had remittent fever, I think her delivery disposed her to absorb the miasms from the earth which had before been under a water-closet.

12 RUE BELLOT,  
GENEVA, SWITZERLAND,  
August 24th, 1883.

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## QUARTERLY REPORT ON OBSTETRICS AND GYNECOLOGY IN FRANCE.

BY

A. AUVARD, M.D.,  
Interne at the Maternity of Paris.

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### INTRODUCTION.

THE object of the reports which I have undertaken to write for this JOURNAL being to make its readers familiar with everything pertaining to the obstetric and gynecic art occurring in France, it appears necessary to give, in this first article, a brief outline of the administration of hospital services in France, and the method of instruction in obstetrics and gynecology.

In my country, more than in any other, the force of centralization in a single town is felt; Paris is, indeed, the city where these two sister arts are cultivated with the greatest assiduity. The provincial faculties and schools play but a secondary rôle, although an important one.

The faculties of medicine outside of Paris are five in number: Lille, Nancy, Lyon, Montpellier, Bordeaux. In each one of these cities, there exists a maternity hospital, controlled by a professor, who has under him an adjunct professor, a chief of staff, and an interne. Professor Pilat directs the maternity of Lille; Professor Hergott that of Nancy; Professor Bouchacourt that of Lyons; Professor Dumas that of Montpellier; and, finally, Professor Moussons is at Bordeaux.

Without dwelling longer on the method of staff organization as it exists in the provinces, let me at once describe the Parisian.

Besides the *Clinique d'Accouchements*, directed by Professor



Depaul, and the *Maternité* of Paris directed by M. Tarnier, there existed, in 1881, simply a lying-in department annexed to those of medicine and surgery, and under the control of physicians or surgeons. In this very year, the Board of Public Works recognized the necessity of separate lying-in departments, under the care of specialists, and therefore created such departments in the principal hospitals of Paris, which were to be absolutely independent, and under the guidance of men specially nominated. The first to be nominated were Budin at the *Charité*, Pinard at *Lariboisière*, Ribemont at *Tenon*, and Porak at *St. Louis*. This year two new accoucheurs have been elected, namely, Bar and Maygrier, and they are soon to serve in one of our large hospitals. Six in addition are to be nominated, and they will complete the number necessary to direct the lying-in service of the city of Paris.

This reform accomplished, there will exist then in Paris, the *Clinique d'Accouchements*, the *Maternité*, and about twelve services under the control of accoucheurs. It is easily seen, then, that in France, and particularly in Paris, the departments of obstetrics and gynecology are in process of reorganization; and, this once accomplished, France will be able to fight her neighbors with similar weapons.

My intention is to make a report of, in the first place, whatever of interest may happen in private practice or in the hospitals of the principal French cities, particularly Paris; in the second place, to give an account of obstetrical and gynecological literature, emphasizing the reception accorded to special works, and the dominant belief in France on such subjects as are treated of; and in the third place, to note facts or news which may prove of interest to specialists in obstetrics and gynecology. In this first report I shall simply give a bird's-eye view of what, from a scientific or clinical standpoint, has happened of interest in the first six months of the current year, reserving for a future report a deeper and more detailed analysis of current questions.

#### LITERATURE.

The principal works on obstetrics and gynecology which have so far in 1883 been published in France are: A TREATISE ON OBSTETRICS, by CHARPENTIER; A TREATISE ON THE THERAPEUTICS OF GYNECOLOGY, by TRIPIER; and, finally, four monographs, presented as theses at the examination for adjunct professorships at the school of Medicine, by Ribemont, Bar, Maygrier, and Pouillet. I will simply refer by name to the Manual of Gynecology, by Lutaud; to the Manual of Obstetrics, by

Declore and Lutaud; the *Treatise on Uterine Displacements*, by Professor Denucé, of Bordeaux.

Charpentier's treatise, in two large volumes, is a species of encyclopedia of condensed obstetrical knowledge. The author, in his desire to give his readers information in regard to all recent French and foreign works, gives a fairly complete résumé in his book, so that each point is exemplified by the most recent views. In the main, Charpentier limits his efforts to giving simply the views of other accoucheurs. This method of writing has its advantages and also its defects; of advantage to the specialist who is already familiar with obstetrics; a disadvantage, however, to the student who, from a perusal of this treatise on obstetrics, will find it difficult to shape an opinion.

In this work embryology receives but little notice, whilst the pathology of pregnancy is treated of at great length.

As for the forceps, a question which, for a long time, has been full of interest to Parisian accoucheurs, whilst they are described at length, M. Charpentier does not range himself in opinion on the side of the majority of French obstetricians. He recognizes the superiority of Tarnier's forceps when the head is in the excavation, and, above all, when at the inferior strait; but when the head is above the brim, he prefers the old forceps. On the contrary, whilst Tarnier's forceps allow of axis traction, their greatest advantage is that they can be employed at the superior strait.

Dr. Tripier, under the name of *General Therapeusis of the Diseases of Women*, and the *Application of Electricity to these Diseases*, has given us a very interesting work, and one which contains whatever is worthy of note under this heading.

In Paris, as indeed elsewhere, electricity, as applied to the diseases of women, is used by only a few gynecologists. To use it, and to obtain satisfactory results, requires special knowledge not possessed by the majority of gynecologists, and, in general, this therapeutic method is least used by the best known men. It is probable that, though M. Tripier's book will prove interesting and valuable reading to gynecologists, it will not exercise a marked influence on the therapeutics of gynecology.

The four monographs I now have to speak of are full of interest, as giving to the French public a knowledge of the subjects treated of by each. The first, by M. Maygrier, treats of the different forms of puerperal epidemics; and though this rather stale subject is handled with talent, yet, since the question strikes no new key-note, I forbear further reference here.

Far otherwise the subject of which M. Bar treats—Antisepsis

as applied to Obstetrics. It is an excellent exposé of the knowledge of to-day on this subject. The superiority of this method is proven, in a striking manner, by means of statistics from various sources, amongst which we mention, in particular, those of Prague, Copenhagen, and the Maternité at Paris, where, during the past year, the mortality has been but one per cent.

The various antiseptic means are exposed in detail, so as to allow one to compare the results obtained from carbolic, the bichloride of mercury, eucalyptus, and other analogous agents. The concluding pages of this thesis are devoted to the antiseptics of the new-born. This question, still in its youth, is only touched upon; it is, however, a most interesting subject, and I could wish the author had dwelt on it more at length.

Dr. Ribemont has studied the two methods of placental delivery—that by traction, and that by expression. The last is generally accepted in Germany, where it first saw the light. In France, however, accoucheurs cling faithfully to traction, because, though its use in unskilful hands brings greater danger to the patient, it is certainly safer than expression in the hands of the practised. In other words, expression finds few partisans among the French.

Since the introduction of the forceps by the Chamberlains, their number and variety have increased considerably. In order to throw light on this vast arsenal, we must study, not the different instruments, but the diverse forms. This Dr. Pouillet has attempted in his thesis, and he there considers those forms of forceps which possess some real distinguishing characteristic or proclaim some new principle.

Tarnier's forceps, naturally, claim an important place. M. Pouillet also describes a new instrument, consisting of an ordinary Levret, to which two cords are attached, making flexible handles. Owing to the arrangement of the handle of the tractor, one is enabled, following the principles of Dr. Tarnier, really to make traction along the axis of the blades. This instrument, which, it is pretended, gives greater mobility to the fetal head than Tarnier's forceps, has as yet not been tried on the living, and it is not to be pre-supposed that it has advantages sufficient to give it the preference over Tarnier's.

#### CLINICAL OBSERVATIONS.

Since January, 1883, three cases of uterine fibroids complicating labor have entered the Maternité. The first case, where the tumor, of a larger size than the fist, filled the excavation, was delivered spontaneously without any call for interference. Eight



days after, an exactly analogous case, from a clinical standpoint, entered the hospital, but the course of labor was very different. The Cesarean section was required for delivery. Our neighbors across the Rhine really seem to be on the point of substituting the old Cesarean section for Porro's operation. In France the reaction is less, and the number of successes obtained from the Porro encourages most accoucheurs still to resort to the Italian method.

M. Tarnier, in the case of which we are speaking, had intended to do the modified Porro, but the fibroid in the pelvis forbidding the formation of a pedicle, caused him quickly to change his intention. The operation done then was after the old Cesarean method, including every antiseptic precaution in vogue to-day. The patient died at the end of thirty-six hours from a combination of shock and sepsis, the latter arising from the fact that the fetus, whilst not macerated, was putrid.

The third case entered the Maternité in the month of May. At first the Cesarean section was thought necessary and every preparation made for it, but under the influence of the pains and the repeated examinations the woman was subjected to, the tumor left the true pelvis, ascended into the abdomen, and allowed the extraction of a living child through traction on the legs. Convalescence was normal, and the patient was discharged well.

During the first quarter of this year transfusion has been done twice at the Paris Maternité for the relief of extreme anemia, in which state post-partum hemorrhage had left the patient.

In the first case (a success) the apparatus of Roussel was used while the woman was in syncope. Under the influence of ninety grammes of injected blood the woman regained consciousness, and, notwithstanding the extreme anemia in which she was for many days, left the hospital in about one month, cured.

The second case is nearly analogous: the woman being in the same grave condition, and in addition a more pronounced albuminuria, accompanied by general edema. Transfusion was done with Collin's apparatus; the patient rallied for a little while, but only to return to the syncope whence the transfusion had aroused her for a time. The quantity of non-defibrinized blood injected amounted to about one hundred and twenty grammes.

French opinion is far from settled in regard to transfusion. In Germany, latterly, the method of Schwarz seems to have grown in favor—that is to say, the intravenous injection of a saline solution. This method, whilst much simpler in its application, has scarcely yet been tested in France, but if the happy results obtained in Germany are indorsed by still further successes, it is probable that French accoucheurs will soon have recourse to it.

The elytro-ptyergoid of Chassagny<sup>1</sup> has been tested in one case at the Maternité—a case of placenta previa with hemorrhage. The apparatus remained in place for about twelve hours, and thanks to it the hemorrhage was most effectively suppressed; but as regards dilatation it gave absolutely no result.

A single observation cannot suffice to pass judgment on an instrument; nevertheless, from its action in this case, it is apparent that while M. Chassagny's instrument may lay claim to being hemostatic, its dilating power is almost *nil*, and we do not yet possess in this new instrument something which can take the place of the classical tamponade.

M. Budin has recently observed and published a very interesting case of persisting fetal heart after cephalotripsy. The perforation was accomplished by means of Blot's instrument, and the operator, in order to silence the fetal heart-beats which could still be heard through the abdominal parietes, directed the point of the instrument towards the medulla, and thus completely destroyed this organ. Notwithstanding this precaution and the use of the cephalotribe, in order to diminish and extract the fetal head, its heart, for some time after delivery, continued to beat very perceptibly.

The autopsy demonstrated the almost complete destruction of the medulla by the perforator, and that but a small portion had been left untouched.

This observation has considerable interest from the side of physiology. It shows that the beats of the heart are far from a certain criterion of viability, since they may persist where there is profound lesion of nerve substance, particularly that of the bulb.

Amputation of the cervix by the galvano-cautery wire is high in favor in Paris. Its use makes this operation an easy one, and allows it to be performed without, generally, loss of blood. It is, hence, a very seductive method, but its results are not always as favorable as one might expect. The following case is proof:

On the 15th of May, 1883, M. Tarnier removed, by means of the galvano-cautery, a cervix with greatly hypertrophied vaginal portion. Everything happened as one could wish, but eight days after, a very considerable hemorrhage took place from the surface of the stump, which could not be stopped by tampons, but required the energetic application of the Paquelin.

This occurrence, whilst rare, nevertheless throws a certain amount of discredit on the method, and brings prominently forward the value of the knife.

PARIS, September, 1883.

<sup>1</sup> See this JOURNAL, September, 1883, p. 976.

TRANSACTIONS OF THE AMERICAN  
GYNECOLOGICAL SOCIETY.

(ABSTRACT.)

## EIGHTH ANNUAL MEETING.

HELD IN PHILADELPHIA, SEPTEMBER 18TH, 19TH, AND 20TH, 1883.

*First Day, Morning Session.*

THE Society met at the College of Physicians on Tuesday, September 18th, and was called to order at 10 A.M., by the President, Dr. Gilman Kimball, of Lowell, Mass.

## THE ADDRESS OF WELCOME

was given by DR. E. L. DUER, of Philadelphia.

## SUPERINVOLUTION OF THE UTERUS.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., read a paper on the above subject, in which he first referred to the fact that Sir James Y. Simpson described this disease more than thirty years ago. In each case recorded by him, there was not much relief afforded by the treatment, and scarcely any of his patients were practically cured. Although unfrequently referred to in the text-books, Barnes believes this condition to be far from uncommon. Hart and Barbour quote to the effect that it has been found in almost one per cent of all cases of uterine disease treated. Dr. Beverley Cole, of San Francisco, stated at the meeting of the American Medical Association, held at Richmond, that he had seen many cases. Superinvolution should be distinguished from atresia of the uterus, with which some writers have confused it. Others, again, mention the claim of Simpson, that superinvolution may occur in the same connection in which they refer to an undeveloped uterus, or to one whose cavity has become obliterated from the effects of some inflammatory process not necessarily involving the diminished size of the organ. Its name implies that superinvolution only occurs after the process of involution has been once set in progress by the emptying of a uterus once occupied by some mass or body which has produced the increase in size beyond the normal point, as, for instance, hydrometra, physometra, hydatids, or removal of the various uterine tumors, as well as upon the conclusion of uterogestation or abortion. The extent to which this may go varies from the slightest shortening to a complete disappearance and obliteration of the entire uterus and ovaries, as occurred in the case reported by Whitehead.

Dr. Johnson gave the salient points in the history of four cases, and concluded with a brief summary of the literature of the subject so far as he was familiar with, in the English language



and in the translations. The results of treatment in his cases were far from encouraging, but they were no worse than had occurred in the experience of others. Dr. Coles, of St. Louis, had contended that it is analogous to the atrophy following the inflammatory processes taking place in the liver, kidneys, or testicle, and that an appropriate designation would be "*post-partum atrophy of the uterus*." Dr. Johnson, however, regarded one of the cases reported by Coles as more properly belonging to atresia of the uterus, the uterine cavity having been once almost, if not entirely, obliterated. Dr. Sinclair, of Boston, had reported a case of superinvolution in which he attributed the condition to a lack of force in the nutrition, with consequent enervation, whereby the fatty degeneration of the uterine fibres has been carried beyond the normal point of arrest, with a failure in the renewal of the muscular fibres from their nuclei.

DR. FORDYCE BARKER, of New York, opened the discussion, and remarked, first, with regard to the use of the term superinvolution. The author of the paper had spoken of the fact that some writers insist that the term should be confined exclusively to the cases where the uterus had been partially or completely developed by conception and pregnancy, and that the term should not be used where the reduction in the size of the uterus was due to any other cause. It seemed to him that the term might be used in all those cases where the retrograde process has taken place as a consequence of any cause. He thought it was occasionally seen after the existence of uterine fibroids, especially of the submucous variety. A retrograde process, or degeneration and absorption occurs, and sometimes this is carried to such an extreme that he thought it might properly be called superinvolution. So, also, this condition might be the result of certain inflammatory processes attended with an increased size of the uterus and subsequent degeneration and absorption of the inflammatory products. He thought the term superinvolution might properly be applied to all these cases, whatever might be the exciting cause of the development of the tissues of the uterus, provided the retrograde degeneration passes beyond the normal point.

Next, with regard to frequency. The author of the paper had quoted an opinion that it occurred in one per cent of all uterine cases. Dr. Barker thought it was difficult to determine with regard to the frequency of the disease, because a man who has a large consultation practice would be likely to see a much larger proportion of cases than one who based his statistics upon an ordinary general practice. For himself, he was rather inclined to think that the condition existed quite as frequently as might be inferred from the quotations made by the author of the paper. He certainly saw from one to three cases every year; not that he treated this number, because in a very large majority of instances no relief can be afforded. He then spoke of a practical point which he thought had not been alluded to by either the author of the paper or by any other writer, and one which had been a

growing deduction in his mind for some years, but which he had not exactly formulated, although he had made the statement to some of his medical friends. In deciding whether a given case can be benefited by treatment, whether we have a right to subject the patient to the expense and inconvenience, he had been governed by this principle. He endeavored to ascertain the associated condition of the ovaries. Wherever he found superinvolution of the uterus associated with arrest, or evidence of defective ovulation, where ovulation seems to have ceased, he thought very little could be effected by treatment. He presumed that most of the gentlemen present had seen cases of superinvolution associated with very active ovulation, and he had thought that he had cured some such cases. The proof of the co-existence of these conditions is that at each menstrual period there is evidence of great disturbance of vascularity, the patients suffering from headache, flushing of the face, redness of the eyes, nausea, intense congestions with pains, showing that there is an effort on the part of the system to relieve the plethoric pelvic organs. In such cases, he believed that we had encouragement to attempt treatment, and in two instances, at least, he had succeeded in effecting a cure. The history of these two cases was then given. In the second case, pregnancy occurred, and last June she was seven months advanced, but what the ultimate result had been he had not yet learned. The point which he wished to make was that we might find superinvolution associated with active functional activity of the ovaries, and in such cases, we may promise, with a considerable degree of probability, that the condition of the uterus may be relieved.

DR. A. REEVES JACKSON, of Chicago, was a little surprised at the evidence so far presented of the comparative frequency of this condition. He thought he had never seen but a single case, and that was one of doubtful diagnosis. The patient was thirty-three years of age, and the mother of several children, born at intervals of two years. At the time she was examined, the body of the uterus was much smaller than usually exists from senile atrophy. He was unable to recognize the ovaries at all, although the abdominal walls were exceedingly relaxed. He introduced a galvanic stem pessary, which the patient wore for a good many months without any result. In this case it seemed difficult to him to make the differential diagnosis between a premature climacteric and the condition called superinvolution, and he thought the question of differential diagnosis must come up quite frequently where atrophy occurs in all the pelvic organs. Whether or not it originates in the uterus is an important question to decide, as having reference to the propriety of treatment. The point which Dr. Barker had made he regarded as extremely practical; for, if there is activity in the other organs, it may be assumed that atrophy of the uterus does not depend upon its own vascular or nervous supply.

DR. VAN DE WARKER, of Syracuse, called attention to a possible source of error in diagnosing superinvolution. There are

cases of excess of involution involving the cervix alone. He thought it not rare to discover that the posterior lip of the cervix alone was very much atrophied, and the anterior lip still remained about the normal size. In such cases the uterus would measure considerably less than normal. Yet the body would be intact, so far as involution was concerned. He had not seen this condition except associated with lacerations, and he thought it is entirely due to the surgical lesion of the part. Why the atrophy was confined to the posterior rather than to the anterior lip he was unable to say. He had found quite a number of cases in which this condition existed, and in which he found it very difficult to repair the lesion on account of the atrophy of the posterior lip, and yet they seemed to require an operation as much as those in which the size of the anterior and posterior lips was equal. He thought it possible that Dr. Johnson's first case was one of this character.

DR. H. P. C. WILSON, of Baltimore, said that while he had seen many cases in which the uterus was small in women who had never borne children, it had been exceedingly rare that he had met with the condition described in the paper by Dr. Johnson. He could recall only two or three cases of superinvolution of the uterus occurring in women who had borne children, or had had miscarriages or premature labor. He thought it occurred much more rarely than one might be led to infer from the paper and the remarks made by its author. In the few cases which he had seen he had not been able to afford the slightest benefit, either by internal medication or local treatment, when there was associated superinvolution of the uterus and atrophy of the ovaries, and he thought the remarks made by Dr. Barker touched the keynote in the matter. In those cases in which the ovaries are still normally active he thought he had benefited his patients.

DR. ROBERT BATTEY, of Rome, Ga., was forcibly impressed with the remarks made by Dr. Barker. Superinvolution of the uterus was one of the very common results of the surgical operation with which his name had become identified. In the majority of his cases this condition had resulted, and in quite a number of them the superinvolution had been extreme, and in all of these instances there was no disease of the uterus whatever. In his judgment, it was the removal of the ovaries which induced the superinvolution of the uterus, and therefore the weight of the practical remarks made by Dr. Barker concerning the necessity of ascertaining the condition of the ovaries in all of these cases. It is a want of proper ovulation. He disagreed with Dr. Tait, of Birmingham, in depressing the ovary into an organ of little importance in the human economy—less, perhaps, than the spleen even. Dr. Battey regarded it as an exceedingly important organ. He had not heard that removal of the Fallopian tubes had produced such superinvolution of the uterus. With regard to treatment, where the condition does not result from removal of the ovaries, but from disease of these organs, his judgment was that electricity, perhaps, is the best remedy that can be employed.



He had not cared to employ the galvanic stem, but his local treatment had been by dilatation of the cavity of the uterus with tents, and the application of the galvanic current to the ovaries rather than to the uterus.

DR. W. H. BYFORD, of Chicago, thought the process of involution was not so well defined that any one could say exactly what the distinction was between superinvolution and atrophy, or whether superinvolution is one of the stages of atrophy. He believed there was quite a difference between superinvolution and atrophy, and yet he believed that in a great many cases superinvolution is one of the stages of atrophy, and that neither could be cured when it had advanced beyond a certain limit—that is, when the characteristic muscular fibres of the uterus are lost. He thought we should, as Dr. Barker had hinted, divide the cases into those in which simple superinvolution alone is present, and those in which the superinvolution is accompanied by superinvolution or atrophy of the entire pelvic organs.

With reference to the curability of the cases, he believed that, when the ovaries are reduced below their natural size, the uterus necessarily becomes superinvolved, and that when these conditions are associated it is impossible to cure the disease of the uterus itself. But when from some accidental cause the uterus becomes reduced below its natural size, and still retains its characteristic muscular tissue, he thought cure might be effected, and that in these cases the cure is effected by stimulation of the ovaries as well as of the uterus. He thought the time was yet to come when it should be known exactly what superinvolution is and how its cure shall be brought about. With reference to its frequency, that depended very much upon the idea entertained concerning its exact nature. He was sure that he had seen quite a number of cases.

DR. H. F. CAMPBELL, of Augusta, Ga., thought it not invariably necessary that the ovaries should be defective in action, or that there should be atresia of the uterus to account for this condition. He believed it to be possible that injury done to the muscular tissue of the uterus, with or without diseases of the ovaries, and without closure or atresia of the cavity of the uterus, might produce superinvolution.

DR. JOHNSON, in closing the discussion, said he directed attention in the paper to the fact that superinvolution might be caused by other conditions than pregnancy. He regarded the point made by Dr. Barker with reference to treatment as being an exceedingly important one. He could conceive, however, that it was possible to fall into error in dividing the cases as Dr. Barker had suggested, unless one was exceedingly sure with regard to the condition and the size of the ovaries, which it was not always easy to make out, except in regard to the activity of the organs, as evidenced by the symptoms accompanying menstruation. In a case where ovaries are inactive, however, he thought it would hardly be worth while to put the patient to any considerable expense with reference to treatment.

With reference to Dr. Battey's remark, that superinvolution followed removal of the ovaries, Dr. Johnson thought it true that it also occurred in cases in which the ovaries had not been removed. In speaking of the frequency of the condition, he had simply given the opinions expressed by certain writers, and spoke of it himself simply as being sufficiently frequent to be worthy of mention.

DR. R. STANSBURY SUTTON, of Pittsburg, Pa., then read a paper on

#### THE IMPORTANCE OF CLEANLINESS IN SURGICAL OPERATIONS.

It was based largely upon what he had observed during a protracted visit abroad. Reference was first made to the old plan of treating wounds openly and by means which provoked suppuration, on the principle that every wound should cleanse itself thoroughly, by free discharge, in order to remove the detrimental influences which existed within. At the present time, nearly all unfavorable conditions of wounds are supposed to be the result of external influences, and this view has its culmination in the germ theory, based upon the presence of micro-organisms. A natural outgrowth of this theory is the method by which it was supposed these producers of disease and unfavorable conditions could be either killed or prevented from exerting their detrimental influence—more recently known by the term *Listerism*, which included the use of carbolic acid and the rigid observance of cleanliness. After a while it became known that carbolic acid, the agent supposed to act as a germicide, did not, of the strength usually employed, kill the micro-organisms, and soon after that when used either of considerable strength or in free quantity, there was great liability not only of killing the germs, but of producing grave if not fatal constitutional disturbance of the patient. Then came the war of words and statistics to show that just as good results were obtained before as after Mr. Lister brought forward his methods, and by merely observing the strict rules of cleanliness and generally accepted surgical principles, and therefore the good results obtained by Lister's method are due to cleanliness chiefly. Much of the misunderstanding, however, concerning the value of Mr. Lister's methods has arisen from regarding carbolic acid and *Listerism* as synonymous terms. Cleanliness should be observed in all surgical operations. It forms part of Mr. Lister's plan, and since the adoption of his methods, which has taught surgeons that time and rigidity in applying details are essential to secure perfect cleanliness, the mortality in septic disorders has greatly diminished. Carbolic acid should not be abandoned merely because it had, in certain cases, produced unfavorable symptoms, and although Keith, Tait, Bantock, and others do not use it, and yet obtained equally as good results as are obtained by those who continue its use, the theory should not be condemned because one of its important features, if not the most important, is cleanliness, and time and science may yet give us a more effi-

cient germicide than is carbolic acid. Dr. Sutton gave in detail the successive steps necessary to insure cleanliness with the greatest certainty, believing that the best success in the treatment of wounds came from cleanliness chiefly, and the use of antiseptics to a much less marked degree.

DR. T. A. EMMET, of New York, said he had nothing in particular to add to the paper, except to state that for a long time he had been trusting more to soap and water than to disinfectants. The operator may keep his own hands clean, but, as had truly been said by Dr. Sutton, he cannot control absolutely those of his assistants. He was particularly struck in seeing Mr. Tait, probably one of the most successful operators now living, who carries this point to such an extent that he does his own sponging, handles his own instruments, does not allow his assistants to touch a single thing used about the patient. He was entirely in accord with the views which had been expressed by the writer of the paper.

DR. W. T. LUSK, of New York, thought that at the conclusion of the paper a description of Listerism was given which would be satisfactory to the most ardent follower of Mr. Lister, with the single exception that the author would not recommend in a healthy locality the use of the spray in abdominal surgery. He thought that in this respect Mr. Lister would be willing to go as far as Dr. Sutton. But the entire *resumé* of the subject given by the author of the paper illustrated how enormously the opinions of men had been modified by the labors of Mr. Lister. What he had to say should not be considered as a criticism upon the paper, because he was in precise agreement with the author concerning many points. The reflections which had been made upon the spray might lead many to suppose that it was entirely unnecessary, and not only useless, but a positive source of danger. He was unable to agree with the writer of the paper in this respect. There are dangers which may or may not exist, but which are not recognized by the senses, and it is these which Mr. Lister proposes by the spray to remove, and merely because they may not be present, it is none the less important to resort to these few details which have been discountenanced by the author of the paper except in hospital practice. Dr. Lusk said he was not yet able to give up entirely the use of the spray, although he recognized how much more important certain points made by the author of the paper were than the spray itself. He could but be interested in the changes which had taken place in the hospital with which he had been connected, where he had seen men who had scoffed at Listerism and the spray, stating that the hospital should be abandoned, and crying out that its walls should be razed, whereas those who have adopted the Listerian methods are getting as good results as are obtained in any hospital in the world. Some time ago he performed the first successful ovarian operation in a public ward in Bellevue Hospital. Full antiseptic precautions, according to Lister's methods, were adopted, and the result was entirely satisfactory. At the same time, some of



his colleagues were disposed to think that he had been guilty of a crime by operating upon such a case in such a locality. During the past winter he had operated four times in the same hospital, and in not one of the patients did any serious symptoms follow the operation, and in only one did the temperature rise above 101° F., and in that case it remained at 102° F. only a few hours. Of course, remarkable results had been obtained where the spray had not been used, but he could not but believe that for the most of us an antiseptic spray was a good thing to be used.

DR. H. P. C. WILSON, of Baltimore, said that Dr. Lusk had expressed his sentiments perfectly with regard to Listerism and the use of the antiseptic spray. He had been greatly gratified with the paper by Dr. Sutton, because it brought out the great importance of cleanliness, one of the points for which Mr. Lister contends, and after all, cleanliness is the great thing to be observed. It seemed strange to him when he heard successful operators crying out against Listerism, while they used all the methods of Lister except the spray. He could not see why we should not render the atmosphere in which the operation is to be performed antiseptic, although the precaution should be used not to employ too much carbolic acid in our operations. He had employed carbolic acid too much in many of his cases, and was sensible that he had done some of his patients injury by its use. However, he could see no reason, if sponges were rendered antiseptic by the use of carbolic acid, and all the instruments employed in the operation, and the utensils, why the air of the room should not also be rendered antiseptic. He still persisted in carbolizing the air of the room of the hospital, but did not use the spray during the performance of the operation.

DR. H. F. CAMPBELL, of Georgia, spoke of the success attending grave surgical operations performed years before antiseptic methods, according to Lister, were introduced. Of course the surgeons in those days observed the ordinary rules of cleanliness, and the more strictly they were observed the better were the results obtained. He had seen many cases in which injurious effects were produced by the use of too much carbolic acid, and cited one case in which symptoms of carbolic acid poisoning were mistaken for septicemia.

DR. SUTTON, in closing the discussion, said there was abroad, as well as in our own country, of course, a marked difference of opinion with regard to the value of Listerism, and he thought it arose largely from the fact that Listerism and carbolic acid had been used as synonymous terms. He believed, however, it had been distinctly proven that, in abdominal surgery, carbolic acid is of doubtful utility. He thought Mr. Lister had given his life to science, and that we owe to him very much with reference to the success which has been obtained in modern surgery. But to say that surgeons, for the most part, are now using all the essentials of Listerism except the spray, he believed to be an incorrect statement. Mr. Lawson Tait uses absolutely no carbolic acid about his operation, ligature, sponges, or assistants. All he uses

is boiling water. The only man standing by the side of Tait is Bantock, who has also abandoned carbolic acid entirely; and Dr. Emmet suggests that Mr. Savage has also abandoned it. Dr. Sutton then discussed at some length the theory of throwing the carbolic acid spray into an atmosphere for the purpose of destroying the germs.

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*First Day—Afternoon Session.*

The first paper was read by DR. ALBERT H. SMITH, of Philadelphia, entitled :

HOT WATER IN SECONDARY HEMORRHAGE AFTER PELVIC OPERATIONS.

Since the time when Dr. Emmet, of New York, directed attention to the use of hot water as a hemostatic, at the same time giving credit to Dr. Pitcher, of Detroit, for the original suggestion, the use of this agent for the arrest of hemorrhage has been generally recognized in all of the larger cities of our country, and among the more prominent of the practitioners; but, notwithstanding this, Dr. Smith had been impressed with the idea that in other localities its specific action had not been so fully appreciated as it should be. The author of the paper spoke first of its use in the control of hemorrhages occurring with pregnancy, and in these cases he had used it with gratifying results. He next came to its use in post-partum hemorrhage with some hesitation, but had finally come to regard it as one of the most efficient agents at our command. It may be used as a prophylactic against hemorrhage in every case of labor, and also against local absorption. It had come to be his regular practice to use a vaginal injection of hot water from 115° to 120° F., sufficiently impregnated with some disinfectant, in every case of labor, either simple or complicated, and each injection is continued until the water comes away without any change. Dr. Smith wished, however, to direct special attention to the use of hot water as a hemostatic in surgical operations, particularly the pelvic. He believed that in secondary hemorrhage occurring after such operations, from opening of large vessels, we have in the hot-water douche a means for its control, and the beneficial effects of the use of this agent he wished to illustrate by reference to cases. In a lecture delivered by Prof. A. J. C. Skene, of Brooklyn, recently published in one of our medical journals, he was surprised to find that the author stated that a hemorrhagic diathesis might prevent the performance of an operation. But he was still more surprised that he was unable to control the hemorrhage during certain operations, and also that, while mentioning many methods to be resorted to, he ignores entirely the virtues of the hot water douche. Dr. Smith was perfectly satisfied that hot water will arrest hemorrhage in cases precisely like those reported by Dr. Skene, and also in many other cases in which hemorrhage has taken place of an alarming character. He then referred to a case of laceration of the perineum which came under his obser-

vation in June last, involving the recto-vaginal septum, that was torn to the extent of an inch and a half. He performed an operation for its relief, and gave a detailed history of the case, which progressed favorably for a few days, and then violent secondary hemorrhage occurred from a large vessel, and which was most effectually arrested by the use of the hot-water douche.

The following advantages were claimed by Dr. Smith for this agent in the arrest of secondary hemorrhage especially: It possesses great advantage over all other means for the arrest of secondary hemorrhage. It is entirely efficient as a hemostatic where it can be carried to the source of the hemorrhage, and the simplicity of its application commends it to general use.

DR. T. A. REAMY, of Cincinnati, said he fully agreed with the author of the paper in all that he had said. It had been his custom, while operating for laceration of the perineum, to irrigate the surface steadily with hot water during the entire operation, instead of using sponges.

DR. WILSON, of Baltimore, thought that, especially in post-partum hemorrhage, there was no remedy equal to the injections of hot water. He then detailed the history of a case in which one of his friends removed both ovaries per vaginam, and the operation was soon followed by profuse hemorrhage welling through the opening in the cul-de-sac from the abdominal cavity. Dr. Wilson at once advised the use of very hot water, and introduced the nozzle of a Davidson syringe through the opening as far as it would pass, injected very hot water by the gallon, and continued to use the hot water until it returned perfectly clear.

The paper was further discussed by DR. CAMPBELL, of Georgia, who spoke of Dr. Coleman's metroclyst, which consists of an injecting tube surrounded by a wire cage that holds the opening patent while the fluid enters and returns without obstruction; by DR. MANN, of Buffalo, who referred to a case of cancer of the cervix in which an exceedingly profuse hemorrhage followed immediately upon the removal of a portion of the diseased tissue with the scissors high up near the internal os, and which he was unable to control by the use of hot water or any agents at his command; by DR. GOODELL, of Philadelphia, who had used with the most satisfactory results hot water combined with vinegar. In this way he availed himself of the advantage of the influence of the vinegar as a styptic, and in the heat conveyed by the hot water which affected the parts not reachable by the fluid. Hot vinegar he would regard as a better hemostatic than either hot water alone or combined with vinegar.

DR. BARKER, of New York, remarked that we are liable to be called to attend patients who have become so exhausted by profuse hemorrhage that the loss of only a very small quantity of blood is to be avoided, if it is in any way possible to do so. Such a case had recently been under his observation. He had asked himself the question what hemostatic can be employed which will arrest hemorrhage at once, and act more rapidly than hot water, which usually



requires from fifteen to twenty minutes to produce its effect. He was not prepared to answer this question. In a case which he recently saw, one of profuse hemorrhage from a laceration of tissue in the vagina, he suggested that perhaps the gentle application of cotton batting wet in fluid extract of ergot might accomplish something. He made the application, and no further hemorrhage occurred. He did not wish to say that this was the proper remedy to be used in this class of cases, but wished merely to throw out the suggestion that it is desirable to have some hemostatic which will act more promptly than hot water in those cases in which it is necessary that the hemorrhage shall be stopped at once.

The paper was further discussed by DR. CAMPBELL, of Georgia; and DR. SMITH, in closing the discussion, said he had never found ergot an efficient remedy as a hemostatic. Some of the gentlemen had mentioned the inefficiency of hot water where large vessels had been opened. He had seen several cases of this kind, and, in one, a stream of blood came spurting from the vessel as large as a goose quill: the use of the hot-water douche, carrying the water directly against the bleeding point, and continued until it became perfectly clear, effectually controlled the hemorrhage. Of course, he did not regard the remedy as absolutely specific; yet he believed it to be available to a greater extent than any other now known of, and that it can be applied to a greater number of cases than any other measure which has been suggested.

DR. C. D. PALMER, of Cincinnati, then read a paper entitled:

SOME POINTS CONNECTED WITH THE SUBJECT OF DYSMENORRHEA.

This disease is one of the most frequent, troublesome, and stubborn we are called upon to treat, and, in its effects, direct and remote, one of the far-reaching. Its etiology and pathology are by no means distinctly settled, and the treatment recommended is of the most diverse nature. That dysmenorrhea, or painful menstruation, is mechanical in its origin, or, in other words, that the pain is resultant on some obstruction to the passage of the menstrual flow, is one of the most natural conclusions. Not a few to-day practically indorse it. No doubt that, in a certain proportion of cases, obstructions in the uterine canal do exist, and may serve to produce pain in menstruation. Abnormalities of the uterine cervix, with stenosis, are by no means uncommon. The writer then referred to the different forms of congenital and acquired obstructions of the cervical canal. Stenosis by curvature may exist along the cervical canal, and especially in the region of the internal os, from flexion, which, if anterior, is ordinarily congenital, and if posterior, acquired. Graily Hewitt thinks that this is the most common cause of dysmenorrhea.

If we recognize the different varieties of dysmenorrhea, the neuralgic, the congestive, the obstructive and membranous, as described by various authorities, it is not difficult to understand how that, in a certain sense a degree of all of them—but not all

cases—may at times be attended with some narrowing of the uterine canal. But, aside from all these possibilities, there would appear to be another and a more important factor to be recognized in a larger proportion of all cases and varieties of the disease. To regard all dysmenorrhea as practically obstructive seemed to Dr. Palmer not only erroneous in theory, but pernicious in practice.

What, then, is the nature of dysmenorrhea? It is a functional disorder of the uterus, and its essential and modifying nature is a neurosis. It presents many features analogous to other visceral neuralgias.

To repeat, there is such a condition as obstructive dysmenorrhea. It is, however, comparatively rare. Many of the obstructions are seeming, but not real; at least, there is little or no impediment to the menstrual discharge, in the vast proportion of cases, and the co-existence of pain is not resultant of menstrual retention. Pain is developed by the local influx of blood to and within an organ, the seat of a neurosis; either purely local or a local expression of a general disorder; very generally ante-dating any organic lesion, and almost always aggravated by such as become acquired. The neurotic form of the disease is the most frequent; is attended with the most severe pain; and, excepting the membranous, the most difficult to permanently relieve, if it has continued for a long time.

With reference to treatment, Dr. Palmer said that in young unmarried women it should be purely constitutional, at least for a time, until the necessity for a local exploration is clearly and justifiably apparent. The dysmenorrhea is a local neurosis and expresses a fault in the nervous system at large, a condition which proper hygiene and judicious general treatment during the interval will best combat. Local treatment may be needed, fortunately very rarely, and only, however, after failure following general treatment, thoroughly and fairly tested. General treatment is divided into that which is appropriate for the interval and that for the attack. Iron, dry sulphate, pill of the carbonate, syrup of the iodide, is indicated when the flow is scanty, imperfect, and lacks color. In the opposite states of the menstrual flux, either prolonged or too frequent, arsenic has a decided preference. The virtues of iron are increased by combinations with quinine and *nux vomica*. In every possible way the state of the general health is to be improved. Electricity is indicated only in the purely neurotic, spasmodic, or rheumatic forms of the disease. A combination of mercury bichloridum and iodide of potassium he had found exceedingly efficacious, independent or syphilitic disease. Concentrated tincture of *cimicifuga*, given in moderate doses for a few days prior to the expected period and continued in much smaller doses at short intervals during the time of pain, he had found very beneficial. He had also used with good success the tincture of *pulsatilla* in a similar way. The last two remedies are not contraindicated in any variety. The abuse of

opium in this disease is very great, especially its use hypodermically.

With regard to dilatation of the cervical canal, no one will question its beneficial result. It is indicated in all neurotic and spasmodic forms of the disease, after failure with medical and constitutional treatment. It is contra-indicated only in certain uterine and peri-uterine complications. The best method appears to be by graduated bougies or sounds and the two-bladed expanding dilator. The various stenoses of the uterine cervix play a less important part in the etiology of dysmenorrhea than some think, and are important factors, both directly and indirectly, in the causation of other morbid condition and other attendant symptoms. The only reasonable treatment is to open the stenosis of the canal by incision. In all these cases, where there is organic contraction of the cervical canal, with or without elongation, rigidity and thickening of tissue, etc., it is to be preferred to bougies, sounds, etc.

DR. JAMES R. CHADWICK, of Boston, said he had listened with great satisfaction to the paper read by Dr. Palmer, because it embodied very much the same doctrine which he had believed and taught for a number of years. Certainly during the last six or eight years he had been gradually giving up the belief of structural constriction of the cervical canal, and consequently the belief in obstructive dysmenorrhea. He had scarcely found a case in which incision was desirable except where the narrowing was limited to the external os. He had regarded painful menstruation in certain women as either of local or constitutional origin. When local it seems to be due either to the irritation giving rise to local pain, or, in the larger proportion of cases, to the contraction of the uterus, precisely as contraction of the bladder takes place when there is irritability of the neck of the organ. Taking the other extreme of excessive sensitiveness of the reflex system, he had found a very large number of cases which could be explained and cured in this manner. He had recently seen two in which the neurotic element was very strong, and the treatment consisted in the use of bromides to diminish the reflex irritability during the menstrual period. Instead of using morphine he had resorted to coca and carbonate of ammonia, and both patients recovered.

DR. BARKER, of New York, believed that mechanical obstruction as a cause of dysmenorrhea exists in only a small percentage of cases. That it does exist in some, he thought the experience of all would confirm; on the other hand, we see patients of the same character who have had dysmenorrhea in early life until they become a mother, and in whom the dysmenorrhea occurs just as badly as it existed previous to pregnancy, after menstruation has been re-established. He agreed with the author of the paper, and with Dr. Chadwick, that, in many cases, mechanical obstruction and painful menstruation are associated, but that they do not necessarily bear the relation of cause and effect. He believed there were two forms of dysmenorrhea, one uterine, and the other



ovarian. In the uterine variety there are cases which do not depend at all upon obstruction, and yet are attended by great pain up to the time of the flow, but as soon as the flow is established pain diminishes, and for the rest of the period the patients are comparatively free from pain. In such cases as these he thought the pain was due to the effort of the uterus to relieve the plethora by the rupture of capillaries and exfoliation of mucous membrane. We have these in two special conditions. First, in plethoric women; second, those whose normal condition is below the natural standard of health. With reference to special treatment for these cases, he fully agreed with the author of the paper with reference to the efficacy of iron, and simply wished to state that he had used with the best results the lactate of iron in doses of from three to five grains three times a day, associated generally with chlorate of potash, which he believed was also a very valuable agent in improving the condition of the blood. The moment the symptoms of approaching menstruation begin to develop, there is one remedy which he had come to regard as almost a specific where the pain is dependent upon the condition of the uterus, and that is *apiol*. To get its specific effect its use should be begun at least two days before the period is expected to return, and in doses of usually two capsules after each meal, and continued throughout the menstrual period.

There is another class of cases where the flow commences without pain, and is unattended with pain until it has continued for two or three days. He had seen this form in an entirely different class of subjects, and very frequently in young ladies of full habits, vigorous, strong muscular fibre, who, previous to the period, complained of headache, vertigo, imperfect vision, tenderness and pain in the breasts, backache, etc. In these cases he believed that the dysmenorrhea was ovarian, and here he made use especially of the bromides, administering the bromide of sodium by preference, in doses of ten to fifteen grains in the middle of the forenoon, middle of the afternoon, and at bed time. In this class of cases also the *apiol* is especially serviceable.

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*Wednesday, Second Day—Morning Session.*

The Society was called to order at 10 A.M. by the President.

ANNUAL ADDRESS OF THE PRESIDENT.

DR. KIMBALL then proceeded to the delivery of his address, which consisted of a biographical sketch of Dr. Nathan Smith, founder of the Dartmouth Medical College.

The President deviated somewhat from the rule usually observed by his predecessors, and improved what seemed to him a fitting opportunity to speak of the genius, the indomitable will, and the untiring energy of one who, he believed, had done more for practical medicine and surgery than any other single individual in this country. The subject of his address was born of poor, but respectable parents, in Massachusetts, September, 1762. Dr.

Kimball then traced the history of young Smith through his boyhood and earlier manhood, the successive steps in his labors as he entered upon the study of medicine, pursued it with untiring zeal and energy, and finally found himself at the head of his chosen vocation both as a teacher and as a practical physician and surgeon, in whom were exemplified in the most marked degree, "the eagle's eye, the lion's heart, and the woman's hand."

Speaking particularly concerning ovariectomy, the President said it was not his purpose to raise any question whatever concerning the justness of the claim made for Ephraim McDowell; but it occurred to him while listening to the memorial address of Professor Samuel D. Gross, that something more might justly be said than simply to chronicle the fact that Nathan Smith had the courage to follow in the footsteps of McDowell; for, while Dr. Nathan Smith was the second to perform this operation successfully in this country, the operation taking place at Norwich, Vermont, July, 1821, it was as truly original as was the first ovariectomy performed by McDowell, as Dr. Smith had no knowledge whatever of McDowell's great success. In point of absolute merit, Dr. Nathan Smith is entitled to the same honor which has been bestowed upon Ephraim McDowell.

Professor Gross, of Philadelphia, was present, and made a few complimentary remarks at the close of the President's address, and said that while preparing his address, he was not aware of the fact to which the President referred, namely, that Dr. Smith performed ovariectomy without any knowledge whatever of the previous performance of the operation by McDowell.

#### A RARE FORM OF ABDOMINAL TUMOR.

DR. T. A. REAMY, of Cincinnati, read a paper with the above title, in which he related the history of three cases. The leading features in the first case were the following: He saw the patient in July, 1878, in consultation. She was thirty-eight years of age, and was supposed to be suffering from an ovarian tumor. She had been married fifteen years, was sterile, but had been in ordinary good health up to three years ago, except that she had suffered occasionally from epileptic seizures. Three years ago she noticed first an enlargement of the abdomen to the right of the umbilicus, which moved downward and to the median line, and when Dr. Reamy saw her, it was equal in size to the eighth month of uterogestation. There was bulging along the median line from two inches above the umbilicus nearly to the pubes. The abdominal wall was comparatively thin, and it could be easily determined that the surface of the tumor was irregular. There was clear intestinal resonance in each iliac fossa, dulness on percussion in the region of the liver, and also of the spleen. The vagina was normal, the cervix uteri was normal in size and firmness; there was slight anteversion of the cervix with slight retroversion of the body of the uterus. The os was somewhat patulous. This examination was conducted in the upright position, but the same conditions

were found when the patient was examined lying upon her back. There was neither pain nor tenderness on pressure upon the abdominal muscles. There was no bulging in the vagina. It was clear that the growth was in the abdominal cavity in front by the intestines, cystic, that it contained fluid. Dr. Reamy advised tapping, which was performed. About six quarts of fluid were removed, which had the appearance of blood, and, on examination, it proved to be coagulated blood, containing well-formed and broken-down blood corpuscles. The size of the abdomen was reduced to about one-half. No complications followed the operation. The abdominal enlargement remained as it was after the tapping, but the patient made a good recovery, and although the epileptic seizures continue, she is otherwise in excellent health. The other cases presented features in common with the one reported, but particularly with regard to the character of the fluid removed from the cystic abdominal tumor. One of them, however, terminated fatally, and Dr. Reamy was able to obtain the specimen which had been submitted to microscopic examination and found to be sarcoma. The paper closed with a brief reference to the scant literature on the subject, namely, tumors of the omentum, several of which had been reported by different observers, as Péan, Spencer Wells, and others, and some of which were of the variety to which the three cases he had reported belonged, namely, fluid tumors of the omentum.

DR. C. C. LEE, of New York, thought it possible that if a general rule of tapping was established in this class of cases, as practised by Dr. Reamy, it might be a better knowledge of these growths would be obtained than at present existed. He believed it to be very rare, however, that diagnoses of sarcoma of the omentum could be reasonably made prior to the period at which induration takes place.

DR. R. S. SUTTON, of Pittsburgh, made some general remarks on the subject. He said that doubtless tumors of the omentum were very rare, and he claimed that it is not possible, as a rule, to determine before the belly has been opened whether a given tumor is carcinomatous or sarcomatous; but it is usually possible to determine that the tumor is in all probability in the omentum, and this is done by exclusion. If the tumor contains fluid distinctly or indistinctly, he thought it a very dangerous practice to use either the aspirator or a trocar. If it is necessary to secure fluid for diagnostic purposes, use a hypodermic syringe. Further, Dr. Sutton believed that in the present state of surgery, the surgeon was justified in discarding both trocar and aspirator, and hypodermic syringe, and in making an exploratory abdominal section, and if it was determined that the tumor of the omentum was malignant, the best surgery is to close the abdominal wound without interfering with the growth.

DR. H. F. CAMPBELL, of Augusta, Ga., suggested that many of these abdominal growths are apt to be pedunculated, and therefore thought it might be well to remove the tumor, and



give the patient an additional chance for either prolongation of life or recovery.

DR. REAMY, in closing, discussed at considerable length the propriety of paracentesis, and believed that, all things considered, it is a justifiable operation, not only for diagnostic purposes, but for the relief of symptoms, and equally safe, if not very much more so, than to cut the belly open, even with all the advantages afforded at the present time by full antiseptic precautions.

DR. H. F. CAMPBELL, of Augusta, Ga., then read a paper on  
CONGENITAL FISSURE OF THE FEMALE URETHRA WITH EX-STROPHY OF THE BLADDER.

The author of the paper gave, first, an anatomical description of the development of these organs. He believed that the malformation alluded to was the result of non-closure of the urethra and bladder. He then related the history of a case, at present under observation, and its interest centred upon the question as to the proper time for resorting to operative procedure. He regarded it simply as a matter of quantity and space; that is, at the present time, the child being two years of age, there did not seem to be sufficient material upon either side from which to fill up the deficiency, nor to permit of the necessary after-treatment. After puberty he believed that the operation might be performed to much better advantage.

DR. BROWNE, of Baltimore, related the history of a case occurring in a child eight years old, in whom there was partial ex-strophy of the bladder, and a congenitally patulous urachus filled with calculi extending up to the umbilicus. He proposed to perform the supra-pubic operation, but the family delayed the operation so long that the child died before it was performed.

DR. M. D. MANN, of Buffalo, N. Y., referred to one case which came under his observation in consultation, and in which he advised an immediate operation, which was performed by Dr. Minter, of Buffalo, who experienced no difficulty whatever in its performance, and the results were completely satisfactory.

A STUDY OF THE ETIOLOGY OF PERINEAL LACERATION, WITH A NEW METHOD FOR ITS PROPER REPAIR.

DR. T. ADDIS EMMET, of New York, read a paper with the above title, in which he said that he had long since succeeded by by some surgical procedure in relieving the train of symptoms which were attributed to laceration of the perineum, due, as supposed, to the want of support. But these successes only convinced him that the injury which had been recognized as the factor could exert of itself but little, if any, influence in producing the consequences which had been attributed to it. His belief was that a simple laceration of the perineum, extending even to the fibres of the sphincter ani, produces no inconvenience after the parts once have healed, and that only disturbance occasionally occurred of a reflex character from the presence of cicatricial tissue. Experience, he believed, would bear him out in the state-

ment that no operation performed for the cure of the ills ascribed to the want of support after loss of the perineum will give the needed relief unless some portion of the posterior vaginal wall be invested in the line of union; if that is not done, it would matter little how extensively the surface may have been united, even to the extent of closing the canal, if it be accomplished only by bringing together the tissues of the vaginal entrance. The wished-for support cannot be gained unless the denuded surfaces are properly extended within the canal so as to be posterior to the line of the vaginal attachment with the external tissues, and this will always be very much beyond the limit of any laceration confined to the perineum.

The pelvic fascia forming the sulci along the side of the vagina is reflected over the muscles around the line of junction of the vagina with the external soft parts, so that with the sub-public ligament above, the connection with the coccyx behind, and the tuber ischii on each side, a firm support is given to the outlet. At the point where the vagina and urethra perforate this septum, the fascia forming the sulci within the vaginal canal is reflected over the muscles in front of the anterior curve of the rectum, thus supporting the parts in defecation and when in the upright position, so that the rectal wall cannot encroach upon the vaginal canal. The soft parts may be torn or not, but in many instances before they are lacerated he believed the fascia extending from the sulcus on each side becomes separated from its connection with the vaginal wall, and this separation may take place without any external injury. We have then the condition compared to the mouth of a bag without the running string. So long as proper support is exerted by the fascia and connective tissue of the pelvis, the posterior wall of the vagina will be drawn up, and will be kept in close contact with the anterior wall, and the air will be excluded from the canal.

*Mode of relieving the difficulty.*—It is about twelve years since he began to dispose of a rectocele, by bringing it up behind the closed perineum as a fold, transverse to the axis of the vagina. Observation soon taught him that the chief support was gained, and a permanent result was obtained, only by including some part of the posterior wall of the vagina. In his mode of procedure, therefore, for the repair of perineal laceration he aimed to unite the fold of perineum, bringing it up to the level of the fourchette, or former site of the hymen, leaving a crescent across the axis of the vagina, so that each horn became lost in a sulcus on each side. When the operation has been completed, the line of sutures are entirely within the vagina and out of sight, even when the labia are fully separated. The parts come together, closing the passage at the remains of the hymen, leaving the mouth of the urethra fully exposed, as is the case before rupture of the hymen has occurred. The surfaces all slope gradually toward the vaginal entrance, as in the natural condition, a result which no other operation on the perineum can bring about, and at the same time with no damage to the glands of the vulva.

Place the patient on the back, with the legs flexed on the abdomen, so that the labia may be well separated by assistants. The vaginal outlet will thus be opened so as to expose the carunculae on each side. If the lower portion of this be seized with a tenaculum in each hand, together with the corresponding surface of the posterior wall of the vagina, and the three points be thus brought together, it will be easy to map out the surfaces which may be united. The most common mistake will be committed by taking up too much of the posterior wall, and if this be done, failure may result from the suture cutting out. It is equally important to be able to judge of the number of sutures which should be placed in the angle of the crescent. The rule should be to introduce only just so many as are necessary to bring out the angle of the fold formed by the denuded surface to the vaginal level, and the crescentic line should always be made as small as will be possible to accomplish this. The essential features of the operation, then, are, to make two transverse crescentic denudations; an outer one, with the concavity looking backward, and an inner one, with the concavity looking forward. To establish the situation of these crescents, as already stated, three tenacula are employed. With two the open mouth of the vagina is to be brought together by inserting the points at the level of the upper limit of the remains the hymen on each side. The points at which the tissue is thus received would mark the extremities of the anterior crescent, and while they are held together with instruments, the third tenaculum is to be inserted in the posterior vaginal wall in the median line, at the point to be drawn forward to meet the two former without giving rise to undue tension. This latter point would mark the centre of the posterior crescent. For uniting the crescentic folds, silver wire interrupted sutures answer the best purpose; silk thread, or worm gut, should be employed for closing the perineum and the parts near the skin. Keep the vaginal outlet and parts within reach smeared with an unirritating ointment. If swelling or discomfort takes place, apply hot water by gently separating the labia, and allowing a stream to fall from a saturated sponge. It is not necessary to tie the limbs together. If ordinary care be exercised, the urine may be allowed to pass at will without fear of doing damage to the line of union.

The discussion of the paper was postponed until the afternoon session.

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*Second day.—Afternoon Session.*

Dr. Emmet first gave a *resumé* of the paper which he had read at the morning session; and said that laceration of the perineum does not produce the trouble which is attributed to it; it is never lacerated as it seems to be; no such body exists as the perineal body represented in illustrations and taught by teachers as the keystone of the arch, and for which all operators labor to restore; that not infrequently the tissues in front of the rectum, after laceration has occurred, are thicker than before the injury; and



that the damage done is more apparent than real. He held that the support could only come from the fascia reflected over the muscles just within the vaginal outlet, and that this reflection of the fascia was a portion of the general fascia which is attached to the coccyx behind the pubic arch above, and the tuber ischii on each side. He held that the injury can be best repaired by bringing together a certain portion of the posterior wall of the vagina just at the entrance; that attention to the lacerated perineum itself is of no special importance, and that in performing any operation we may exclude everything referable to the external organs outside of the line of the hymen around the vagina. The special features were, the part which the pelvic fascia plays in supporting these parts; keeping the posterior wall of the vagina in contact with the anterior wall, just as a pair of suspenders keeps the seat of a pair of pantaloons in place.

DR. REAMY, of Cincinnati, said that while perhaps he might be able to indorse more strongly Dr. Emmet's contribution to this operation when he understood it more thoroughly, yet at the same time he could not refrain from the conclusion that if, Dr. Emmet wished to be understood that the new procedure ought to be substituted for that operation which he had so admirably described in his book, and which also had been described by other authors, and which presented to the profession the work of almost his life-time, it was a comfort to think he had had an opportunity to undo the great evil which he had already done. He did not propose to criticise the operation, but Dr. Emmet would pardon him for changing his illustration a little, and stating that the restoration of his suspenders which sustained his pantaloons would be of very little purpose if the pantaloons themselves were split through the entire seat; and that if he lifts up a split perineum into position without restoring the damaged parts it would be just the same as lifting up the split seat of the pantaloons without sewing up the rent. He did not see how the new operation proposed by Dr. Emmet could do more than simply to dispose of the redundancy of the tissue in the posterior wall of the vagina in a limited number of cases, and he could not agree with him in his recommendation of the new operation as a substitute for the operation so well established for lacerations of the perineum. Nor did he think that the distinguished author of the paper would say that it should take the place of the former operation.

DR. FRANK P. FOSTER, of New York, said it seemed to be considered by several gentlemen who had asked questions and participated in the discussion that Dr. Emmet was somewhat radical in having declared substantially that restoration of what is called the perineal body does not contribute to the rectification of the malposition, etc., of the uterus and other organs. Such being the case, it was with some hesitation, but he would venture to do it, that he put himself upon record as being even more radical than Dr. Emmet, and he denied that the perineum has anything whatever to do with supporting the structures

*above* it, and he thought the doctrine that it does has nothing to recommend it except plausibility. But it did not necessarily follow that, because the perineum had no sustaining function, it possessed no function whatever; for it was easy to demonstrate that it had several functions.

DR. R. S. SUTTON, of Pittsburgh, Pa., could readily coincide with what Dr. Emmet said, that the triangular body which operators had endeavored to build up, did not exist; but he could not believe that Dr. Emmet meant that there is no such thing as a lozenge-shaped body between the vagina and rectum; a large body composed of connective tissue and muscular fibres, which, if split, will show distinctly well-formed, strong muscular fibres, and, when split, one-half must go upon either side, a doctrine which had been taught by all teachers, Dr. Emmet included. Again, Dr. Emmet had stated that the tissues after laceration were sometimes thicker in front of the rectum than before. Dr. Sutton could understand how this might be, if there was an enormous rectocele; but otherwise it is anatomically impossible. Dr. Emmet also says that the symptoms attributed to the lesion did not follow it of necessity. Dr. Sutton admitted that there are many cases in which symptoms did not follow which make it necessary for the woman to subject herself to a surgical procedure. But there are cases of cystocele and rectocele, and prolapsus of the vaginal walls dragging the uterus down after them, which conditions have always been attributed to laceration of the perineum, and which conditions are found only in women, as a rule, who have sustained such lacerations. Any operation which does not have for its object a speedy restoration of the perineal body cannot stand in the light of the teaching of the last ten years.

DR. EMMET, in closing the discussion, said he expected, before the remarks were concluded, that it would be said he denied the existence of a perineum, and therefore he had endeavored to explain at great length how the perineum was lacerated; what the effect of restoration was when it had been lacerated; that, when lacerated, it separated, like the drawing-aside of a curtain, etc. He did not deny the existence of the perineum, but he simply wished to deny that any such surface exists as that we have been led to believe exists as it is illustrated by teachers, and for which operators labored to build up. He thought the gentlemen would find that they would not essentially differ with him when they had the opportunity to read his paper carefully and in detail.

DR. CHARLES CARROLL LEE, of New York, then read a paper on

THE MANAGEMENT OF ACCIDENTAL PUNCTURE AND OTHER INJURIES OF THE GRAVID UTERUS AS A COMPLICATION OF LAPAROTOMY.

In a given case, the operator opens the abdomen cautiously, and successfully, as he thinks, but with his last incision he not only divides the peritoneum, but wounds the gravid uterus; or,

mistaking that organ for the cyst, he plunges the trocar boldly into the uterine wall, perchance into its cavity; or, during the last steps of the operation, having emptied the cyst, he wounds the uterus while separating some dense adhesions; what is to be done? The author of the paper then reviewed the literature of the subject, embracing seven cases, including one of his own. The details of each case were then given. From them he deduced the following conclusions:

First, the pregnant womb may be punctured or otherwise wounded during laparotomy, without necessarily causing abortion.

Second, miscarriage seems *a priori*, and from clinical evidence, to depend upon injury of the uterine contents, not of the womb itself, however severe.

Third, if the former has certainly occurred, Cesarean section is indicated, and should be properly performed. In this case, the utmost care must be subsequently taken to secure drainage from the uterine cavity.

Fourth, if the uterine walls alone are injured, the wound is to be treated on general principles. If a deep puncture or incision, it must be sutured with the greatest care with exact coaptation of the edges. For this purpose, fine silk sutures rendered antiseptic are the best. If the neck or superficial puncture, it must not be ligated, for ligatures cut quickly through uterine tissue. If too small to be sutured, the bleeding points must be lightly touched with the thermal cautery until oozing has ceased. Good surgery and the dictates of humanity alike demand that under such circumstances a chance of survival be given the child as well as the mother.

DR. H. P. C. WILSON, of Baltimore, related the history of a case in which he performed ovariectomy on a woman four months advanced in pregnancy. It was found that there was a strong pedicle springing from the uterus as well as from the ovarian tumor, and in separating the growth there was a good deal of injury to the peritoneal covering of the uterus. The uterine attachment was transfixed and ligated with a double ligature. There was no difficulty in removing the tumor. The case progressed as favorably as any which he had ever had, and in the second week the patient was sitting up. About this time she began to have pain in the abdomen, with fever and chills, and Dr. Wilson was perplexed to know what was the condition of affairs. This went on for a week or ten days, when he felt through the abdominal wall a hard knot, and he was almost disposed to think that he had overlooked a second tumor. Finally he reached the conclusion that it was a deep-seated abscess, and was cogitating whether or not he should introduce an exploring needle, when the woman miscarried, about three weeks after the operation. He thought it very probable that abortion would not have occurred in his case had not the abscess formed in the abdominal wall.

DR. H. J. GARRIGUES, of New York, said it has been stated that amniotic fluid might be evacuated and recovery take place,



but this is so exceedingly rare that he thought it must be regarded as only very exceptional; that is, in hundreds of cases it is well known, where such an evacuation of amniotic fluid has occurred, abortion has invariably followed.

Dr. W. H. BYFORD, of Chicago, said it seemed from Dr. Lee's paper that in every one of the cases in which the uterus has been wounded, except in his own, pregnancy was not suspected. He, therefore, thought there was some defect in the examination, or omission in endeavoring to ascertain the exact condition of the patient. Dr. Byford was prevented from doing his duty, first, because the patient was entirely above suspicion, and, second, because he had been repeatedly assured by the attending physician that the possibility of pregnancy must be entirely removed from consideration. His experience, however, in that case, was such that he probably could not be induced to perform another operation without positive evidence with regard to the presence or absence of pregnancy. Before hearing Dr. Lee's paper, he had concluded that it would be always proper, when the uterus was wounded, to open it and remove its contents, and then sew up the wound, but Dr. Lee had brought forward successful cases in which this practice was not instituted, and therefore he had concluded that there were exceptions in which his proposed method would not obtain. He was disposed, from what he saw in the case in which he operated, that if pregnancy is advanced to seven or eight months, probably no stitches introduced into the wounded uterus would hold; for, in less than ten minutes from the time the wound was made, from being of the size which would admit the end of the finger, it became as large as a silver dollar, and the uterine fibres were so strong he was convinced that, if the wound was closed by sutures, the uterine contraction would tear the stitches out almost immediately. He would, therefore, suggest whether or not there should be some distinction made with regard to the rule of action in cases in early and advanced pregnancy, even where the uterine cavity has not been invaded.

Dr. LEE, in closing the discussion, thought it altogether likely that wounds of the uterus could not be so effectually treated in later as in earlier stages of pregnancy, and for the reasons given by Dr. Byford. At all events, he should endeavor to obtain some experimental facts as to the liability of ligatures cutting through the wall of the uterus early and later in pregnancy.

Dr. A. REEVES JACKSON, of Chicago, then read a paper entitled:

IS EXTIRPATION OF THE CANCEROUS UTERUS A JUSTIFIABLE OPERATION?

Notwithstanding all that has been done in the direction of modification of various operations, the result has not rendered it devoid of being an extremely fatal procedure. The mortality after Freund's operation is more than 72 per cent, probably the mortality, if it could be ascertained in all cases,

would be much higher. He had knowledge of eight cases in which extirpation had been performed in Chicago, of which only two had been published. There was no reason to expect that the mortality would be reduced by the vaginal method from that which follows the abdominal method. The author believed that diagnosis of the earliest stages of cancer, in the present state of our science, is absolutely impossible. But it is doubtless true that when cancer is sufficiently developed to be recognized, it is already advanced too far to admit of successful treatment by operative or other procedure. Partial operations are injurious in many ways. Extirpation of the uterus does not lessen suffering, and it does not lengthen the duration of life. The author then gave extended statistics with reference to the duration of life after the operation had been performed, and estimated that it had sacrificed over two centuries of human life. He had collected 157 cases. Only one case had been reported which survived the operation more than two and a half years. In his paper he endeavored to show:

First, that diagnosis of uterine cancer cannot be made sufficiently early to insure its complete removal by extirpation of the uterus.

Second, when the evidence can be established, there is no reasonable hope of effecting a radical cure, and other methods of treatment, far less dangerous than excision of the entire organ, are equally effectual in the amelioration of the suffering, and retard the progress of the disease and prolong life.

Third. Extirpation of the uterus is highly dangerous, and never lessens suffering, except in those whom it kills, and does not give a reasonable promise of recovery, and should not be adopted in modern surgery.

DR. VAN DE WARKER, of Syracuse, said he had already placed himself upon record as substantially supporting the views advanced by Dr. Jackson concerning the advisability of extirpation of the uterus for cancerous disease, and since that time he had had no reason to change his opinion. Dr. Van de Warker then detailed the plan of treatment which he had adopted in recent cases, based upon the method suggested by Dr. Sims. First, to curette the entire diseased surface, arrest the hemorrhage, and subsequently pack it with cotton dipped in a one hundred per cent solution of chloride of zinc, protecting the vagina with a pomade made with vaseline and bicarbonate of soda. The result is that an enormous slough of the cavity of the uterus occurs, several specimens of which Dr. Van de Warker then exhibited. With these he exhibited microscopic sections, which demonstrated that the slough had reached below the point of cancerous infiltration of the tissue.

DR. EMMET, of New York, said the author of the paper had expressed his own convictions with regard to the propriety of this operation.

DR. BAKER, of Boston, thought that operative measures in the treatment of cancer were of great advantage, and based his opinion upon the belief in the local origin of the disease. He

explained at some length his method of operating without removing the uterus, details of which he had already published in *THE AMERICAN JOURNAL OF OBSTETRICS*. And now, at least five years after the operation had been performed, several of his patients were still living and apparently well. The cases, however, in which complete removal of the uterus was justifiable he believed were not of common occurrence.

DR. PALMER, of Cincinnati, indorsed Dr. Jackson's paper, and believed that he had done the profession a great service by bringing the subject up in the shape in which he had presented it. It seemed to him, so far as total extirpation of the uterus is concerned, the cases might be divided into two classes. First, those in which it is clearly unjustifiable; and, second, in which it seemingly might be of benefit. Under the first head, he would include almost every case of cancerous disease starting in the infra-vaginal cervix. Under the second head, he would include primary cancer of the uterine body, which is very rare indeed, and hard and soft sarcomata. Possibly in these cases the uterus may be extirpated, and the entire trouble removed. But it is not always practical, and is usually perfectly impossible to determine whether the disease has not gone beyond the uterus itself, and reached the connective tissue and lymphatics of the pelvis.

DR. SUTTON, of Pittsburgh, had operated in five cases, and in all by Simon's method. He spoke at some length, giving details of the operation as performed by Langenbeck, Freund, Schroeder, Martin, and Simon. He thought the operation justifiable, although he had not fully made up his mind concerning it, but felt that it was in good hands, and that in due time we shall be able to determine, from a very large number of cases, what is the best thing to do under the circumstances.

In closing the discussion, DR. JACKSON said he had nothing to add to what he had already said in his paper.

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*Thursday, Third Day, Morning Session.*

The Society was called to order at 12 M. by the President.

DR. H. F. CAMPBELL, of Augusta, Ga., read a paper on

**MENSTRUATION AFTER EXTIRPATION OF THE OVARIES.**

By general consent, the importance of the influence of the ovaries in the process of menstruation is acknowledged, and it was not the intention of the author in the least to deprive these organs of their influence in the performance of this function. It is a clinical fact that after removal of both ovaries what has been called menstruation continues in many cases, which has been variously attributed to habit, periodical plethora, and more recently to the fact that in removing the ovaries the Fallopian tubes are not removed, which are the real excitors of the menstrual nixus. Dr. Campbell, without denying the influence of either of these causes, wished to present the suggestion that



while the ovaries are unquestionably the ordinary obvious exciters of the act of menstruation, they are probably not the only exciters to activity in the genital organs. He then referred to cases in which the menstrual discharge had been influenced by mental conditions, etc., and suggested that the occurrence of the menstrual function after removal of both ovaries might be due, not to habit, or periodical congestion, or to the fact that the Fallopian tubes had not been removed; but, in certain cases at least, to an endowment of the nervous system, which continued for a while after the organs through which it manifests itself have been removed. Anatomy tells us that the nervous centre for the uterus and the hypogastric plexus is apt to be in the crural bulb of the spinal marrow.

DR. GOODELL, of Philadelphia, had never removed both ovaries without forced menstruation appearing within the first four or five days, and he had attributed it to irritation set up by the inclosed nerves, and so far he was able to accept Dr. Campbell's suggestion that the discharge is probably due to irritation of the nervous bulb. It had been asserted by some ovariectomists that if the ovaries are entirely removed, menstruation is exceedingly rare, and Dr. Goodell, from his own experience, was inclined to think that some of the ovarian structure is left in all those cases in which the bloody discharge continues for any great length of time.

DR. T. A. EMMET, of New York, referred to a case in which he removed both ovaries from a patient at the Woman's Hospital, together with the Fallopian tubes. This woman had menstruated thirteen times regularly since the operation, the only change being that before the operation the period was longer than normal, and since the operation it continued about three days, and was natural in every respect.

DR. H. J. GARRIGUES, of New York, said that in all these cases of prolonged bloody discharge after removal of both ovaries, the fact of the possibility of the existence of three ovaries should be borne in mind. He then cited a case in which the patient recovered after both ovaries had been removed, and subsequently was married and bore a healthy child.

DR. T. GAILLARD THOMAS, of New York, thought the subject was one in which no absolute decision had yet been reached by scientific men as to the influence of removal of the ovaries on the cessation of menstruation, nor the influence which they exerted in the production of menstruation. He had removed both ovaries between fifty and sixty times, had followed up the cases as well as possible, and the impression which had been left upon his mind was that unquestionably when the ovaries are present menstruation is the rule, and when the ovaries are removed menstruation is the exception. He believed that the so-called menstruation occurring after the removal of both ovaries was a metrostaxis, arising from the fixed habit which the uterus has of giving forth menstrual blood under the control of the nervous supply of the ganglionic system,

which continues to exert its influence after the removal of these organs. He did not recall a case where regular menstruation had occurred for thirteen months, as in the case mentioned by Dr. Emmet. He had performed Tait's operation ten or twelve times, and had not found any difference in the result from that which followed Battey's operation. The only difference which he had been able to ascertain between these two operations was that all of the ovarian tissue is more apt to be removed in Tait's operation than in Battey's, and believed that this is the reason why menstruation is less frequently seen after Tait's operation. Dr. Thomas then cited a case in which he found three ovaries. His increasing experience led him to believe that the old view is the correct one, namely, that ovulation is the main factor in menstruation. He did not believe that the Fallopian tubes have anything to do with the excitation of menstruation; but with the performance of that function they have much to do.

DR. W. H. BYFORD, of Chicago, believed that in the majority of these cases the bloody discharge would be found almost invariably to be a simple metrorrhagia. He had no doubt that in many instances some of the ovarian structure is left behind after the operation, and agreed with Dr. Goodell that it is extremely difficult to remove all the ovarian tissue. He further believed that the old doctrine of ovulation and menstruation had not been disproved.

DR. MANN, of Buffalo, had always looked upon this question in very much the same light as had Dr. Thomas, Dr. Goodell, and Dr. Byford. He had performed double ovariectomy in five cases. Subsequent examination in one in which very prolonged bloody discharge existed revealed the existence of cancer of the vagina, and suggested that in a certain proportion of cases the so-called menstruation which followed removal of both ovaries might be due to a similar cause.

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*Third Day—Afternoon Session.*

DR. WILLIAM H. BYFORD, of Chicago, read a paper entitled:

REMARKS ON CHRONIC ABSCESS OF THE PELVIS,

in which he referred to the different positions in the connective tissue of the pelvis in which abscess may occur, the most common being in the connective tissue of the broad ligaments. The cavity in most cases is unilocular. He then spoke of the directions in which the pus is likely to discharge, and the impediments which it might encounter to a free discharge. He also directed attention to the quality of the pus. When the abscess becomes chronic, it is an admixture of serum and blood, and later is almost entirely serous. These changes were traced to the changes which occur in the lining of the membrane of the chronic abscess, and these were studied in detail. At first, the condition is like that seen upon an external ulceration; degenerative changes occur, and in the end the cavity is lined with cicatricial membrane. With the loss

of the granular character of the inner surface, pus is no longer produced.

Dr. Byford summarized his paper as follows: The inner surface of the abscess is the same in structure and other qualities as the surface of an external ulcer. It is covered with granulations which produce pus. These granulations are sometimes exuberant, and form masses of smaller, but generally larger than the fungoid projections on an external ulcer. They may be frail and flabby, and bleed, or firm and vigorous, producing laudable pus. As inflammation of the surrounding connective tissue subsides, and the exudations are absorbed, the granulations disappear in the formation of a cicatricial membrane, the cavity itself becomes lined with the same kind of structures that covers the cicatrized external ulcer, the contents of the abscess here undergo changes of an important nature as the granulations disappear. First, the pus is not increased in quantity; second, serum is exuded from the cicatricial surface and, mingled with the pus, macerates, and finally disintegrates pus globules until they are all destroyed and disappear. After the disappearance of the pus, endosmosis and exosmosis going on through the cicatricial membrane converts the contained fluid into a simple serum. These processes finished, there results an encysted tumor of the pelvis.

DR. T. G. THOMAS, of New York, thought Dr. Byford had rendered great service by examining minutely the internal surface of these cavities and the peculiar changes which occur in the contents of these tumors. The point upon which he wished to speak especially was the necessity for always searching for and opening these abscesses. Of course, all agreed that, after an attack of pelvic inflammation, the fact of the occurrence of these abscesses must always be borne in mind; but there was considerable variety of opinion concerning the propriety of seeking for them and giving an outlet to the pus. To search for these abscesses was advocated by the late Dr. Brickell; more recently, Dr. Mundé, of New York, had advocated strongly the use of the aspirator in searching for them; and, still more recently, Dr. Lyman, of Boston, had read a paper to the same effect. Dr. Thomas thought there was no more dangerous practice in gynecology than to go searching for these collections of pus. If it can be ascertained by conjoint manipulation pretty positively that there is pus in the pelvic areolar tissue, so that the operator can know exactly where to seek for it, then, and only then, are explorations to be made; but, made without such knowledge, very evil results will follow. Having once ascertained positively that there is pus, the method which he preferred of opening them was by taking the ordinary surgical exploring needle, passing it upward, until the groove is filled with fluid, and then introduce a short, sharp-pointed curved bistoury, and slide it along the gutter, until the abscess is ended. His routine practice is to open the abscess freely in this manner, insert a small glass tube with a perforated flange, which may be secured with sutures to the surrounding tissue, and which renders it perfectly certain that the opening will not be



closed. A vaginal injection then answers the purpose of flushing out the cavity completely. When the abscess is large, he stuffs the cavity with tow saturated with iodoform, and repeats it once in twenty-four hours, going on until cure is complete. He had also used injections of a combination of carbolic acid and iodine, or Battey's solution diluted.

DR. GOODELL, of Philadelphia, said that in the great majority of cases of pelvic abscess which come under his observation, several fistulous openings already existed. Whenever an opening had formed above, he first introduced a long uterine probe and endeavored to see if he could make the fistulous tract communicate with the vagina. If he was able to feel the point of the probe in the vagina, he then made a free opening, inserted a drainage tube, washed out the cavity regularly, and in this way he had succeeded in curing a large number of patients. Other plans which he had adopted had been irrigation, as the surgeon irrigates a stump, with a solution of permanganate of potash and also carbolic acid. He had also resorted to injections, employing a much stronger solution of carbolic acid. With reference to aspiration, he had occasionally resorted to it, and while he was not satisfied that it is very good, he did not think it is quite so bad as Dr. Thomas seemed disposed to regard it.

DR. SUTTON, of Pittsburgh, had seen Esmarch, of Kiel, use the curette for scraping out chronic abscess; but the scraping was not intended to remove the long granulations, which Dr. Byford had referred to as being so frequently present in the chronic abscess in the female pelvis.

DR. CAMPBELL, of Augusta, Georgia, said he should not have felt disposed to favor curetting, except for the recommendation which it had received from Dr. Byford. He then spoke of the marked beneficial effects which he had seen produced in the treatment of chronic abscess, and in chronic purulent formations in all parts of the body, by the administration of the tartrate of iron and potassa.

DR. BYFORD, in closing the discussion, said the paper contemplated simply the study of certain features of chronic abscess. Had he discussed the question of treatment, he should have referred to the several points which had already been brought out in the discussion.

DR. G. J. ENGELMANN, of St. Louis, then read a paper on

ERGOT; THE USE AND ABUSE OF THIS DANGEROUS DRUG.

The author of the paper desired to have the use of ergot restricted absolutely to the non-pregnant womb. He believed that it should never be used in the treatment of any condition of the gravid uterus. He made this restriction because of the great liability of the drug to do damage. Its liability to abuse and its ability to produce disastrous consequences are so great, that it is not the question how it may be used, but the fact that it is very generally used, and that its dangerous effects are not appreciated,

that render it desirable to discard the drug entirely for the gravid uterus. There are much safer and milder means which can be placed in the hands of attendants and nurses, and they should be adopted rather than ergot.

DR. JOSEPH TABER JOHNSON, of Washington, D. C., said that he had not found that ergot was so generally used by physicians as would be inferred from the statement made by Dr. Engelmann. He thought Dr. E. had overstated the matter, and while he himself believed it were better if ergot were banished from the lying-in chamber, he was not willing to admit that physicians in general employed it in all stages of labor so uniformly as had been intimated. He had not found physicians who used ergot in the first stage of labor, and he thought it an error to so state it.

DR. CAMPBELL, of Augusta, Ga., invariably administered ergot after the expulsion of the placenta, and also after the use of chloroform.

DR. ALBERT H. SMITH, of Philadelphia, indorsed the views advanced by Dr. Engelmann, and said that he considered ergot in the practice of obstetrics as an unmitigated evil. He did not believe that it was ever needed under any circumstances; that it was always capable of doing harm, and that it generally did harm.

DR. ELWOOD WILSON, of Philadelphia, was astonished to hear Dr. Engelmann state that ergot should be banished from obstetrical therapeutics. He very much doubted whether any man present would be willing to approach a case of placenta previa without the aid of ergot. He had used it in thirty-two cases of this kind with excellent results. He thought it a most excellent remedy in all those cases which exhibit a tendency to relaxation of the uterus and the occurrence of post-partum hemorrhage. He regarded it of immense advantage in post-partum hemorrhage; but one difficulty with reference to obtaining this was that the ergot was given too late and in too large quantities. He also regarded the use of ergot in the third stage of labor as very important. He was free to say that he had used ergot in the early stages of abortion, and had not experienced any great difficulty from its effects.

DR. ENGELMANN, in closing the discussion, said that he did not mean to discuss the possible limits for the use of ergot, or to give the scientific distinction of the proper indications. He meant simply to say that it is a dangerous drug, that it does a vast amount of mischief, and certainly is a powerful factor for stimulating uterine contraction, and that we have other means equally as good and better to accomplish the same end without subjecting the patient to the same dangers.

The retiring President then introduced the President-elect, DR. ALBERT H. SMITH, of Philadelphia, who made a few appropriate remarks, and thanked the Society for the very great honor which it had conferred upon him.

DR. GOODELL, of Philadelphia, moved that appropriate resolutions complimentary to the services of the retiring Treasurer, Dr.

P. F. Mundé, of New York, be prepared and entered upon the minutes of the Society. The motion was unanimously carried.

The following papers were read by titles:

New Method of Operating for Fistula in Ano, by Dr. Edward W. Jenks, of Chicago; A Theory to Explain the Relaxation of the Vagina and Perineum During Labor, by Dr. James R. Chadwick, of Boston.

The following officers were elected for the ensuing year:

*President*, DR. ALBERT H. SMITH, of Philadelphia.

*Vice-Presidents*, DR. JAMES R. CHADWICK, of Boston, and DR. SAMUEL C. BUSEY, of Washington.

*Secretary*, DR. FRANK P. FOSTER, of New York.

*Treasurer*, DR. MATTHEW D. MANN, of Buffalo.

*Council*, DRs. T. GAILLARD THOMAS and FORDYCE BARKER, of New York; T. A. REAMY, of Cincinnati; and R. S. SUTTON, of Pittsburgh.

*Active Fellowship*, DR. R. B. MAURY, of Memphis, Tenn.

The next annual meeting will be held in Chicago, beginning on the last Tuesday in September, 1884.

## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

*Meeting, April 17th, 1883.*

### FREUND'S OPERATION FOR EXTIRPATION OF THE UTERUS.

DR. B. F. DAWSON presented the uterus removed by Freund's operation, about twelve days before, from a woman fifty-one years of age, for cancer of the cervix. He first saw the patient about five weeks previously, when she was in very poor condition from loss of blood. The curette and the cautery had been used several times by himself and Dr. Kühne, her regular attendant, with the result of checking the considerable hemorrhage; notwithstanding all treatment, the patient was rapidly growing worse, and was anxious to have a radical operation performed. Careful examination showed that the disease was not limited to the cervix, but extended up to the body; yet no involvement of the neighboring lymphatics could be discovered. The operation was very tedious, and required two hours and forty minutes for its performance; but no accident occurred, except the wounding of a small vein, which was readily secured, and no unusual difficulties were encountered. The patient took ether badly, but at the end of the operation rallied, and it was believed that she stood a fair chance to recover. A change took place, however, and she died at the end of seven hours, evidently of shock. The speaker said that, in



looking back upon the difficulties of this operation, the length of time required for its performance, the disembowelling requisite, the long abdominal incision, and the consequent danger to the life of the patient from shock, he felt convinced that it was an operation which should seldom, if ever, be undertaken, and he regretted that in the present instance he did not do the vaginal operation instead. Examination of the specimen showed the disease extending above the os internum.

DR. P. F. MUNDÉ was glad to hear Dr. Dawson, after having had personal experience with Freund's operation, speak of it in terms of disapproval. He himself, he was pleased to say, had never had any personal experience with it, although he had witnessed its performance at the hands of others. The length of time required to do the operation, the amount of shock attending and following it, and the few chances of immediate or permanent recovery, make Freund's operation one which should seldom be undertaken in gynecological surgery; indeed, in his opinion, it was one which should be entirely tabooed. If total extirpation of the uterus were indicated and feasible, he could hardly imagine a case where the vaginal operation would not be preferable to that of laparotomy. The operation, as performed by Billroth, Schröder, and Czerny—of removing the diseased portion alone, when confined to the cervix, by a wedge-shaped excision—subjected the patient to much less risk of life from the operation itself.

DR. LEE concurred in the views expressed by Dr. Mundé, and said that the suggestion with regard to the indications for the operation made by Dr. Polk (who arrived later), at a previous meeting of the Society, deserved serious consideration. An operation of such severity as Freund's had proved to be he believed should not be undertaken for a disease which, should the patient recover from the immediate effects of the operation, would almost certainly recur within a year or two. He had witnessed the operation in four cases, and in each instance the patient died within forty-eight hours. Certainly, where the cancerous growth involved only the cervix, the operation for removal of the diseased tissue alone, as suggested by Dr. Mundé, was the one which was indicated. This operation, which had frequently been performed by Dr. Emmet and others, gave present relief, and did not involve danger to life. Should hemorrhage occur, it could be controlled by drawing down the cervix firmly and carrying a wire suture behind the bleeding vessel, as in the manner indicated by Dr. Emmet.

DR. W. R. GILLETTE asked whether any of the members present had had any experience with the operation described by Dr. Sims, a few years since, in an article in the *AMERICAN JOURNAL OF OBSTETRICS*, that of removing as much of the diseased cervical tissue as possible with the curette and scissors, and then applying chloride of zinc, causing the remainder of the diseased tissue to come away in a slough. He had resorted to this method in a number of cases, both in hospital and private practice, and had found it of decided temporary benefit. The last case in which he had used it was that of a patient who lived in Greenpoint, in whom the disease did not extend higher than the os internum. She was greatly emaciated, cachectic, had had frequent hemorrhages, and was looked upon as a dying woman. He cauterized the diseased tissue, and then applied absorbent cotton saturated with the chloride-of-zinc solution, of the strength recommended by Dr. Sims, and after nine days a

slough came away, leaving a perfectly healthy-looking raw surface. The patient afterward greatly improved, and no longer presented the countenance of one suffering from malignant disease. Some weeks afterward, slight hemorrhage recurred, and the operation was repeated. It could not be expected that the measure would prove more than palliative. In one case, however, he saw the patient two years afterward, and not a trace of the disease had returned. Serious hemorrhage during the operation had occurred in but a single instance, in which it was controlled by the use of the tissue forceps.

DR. LEE referred to the method recommended by Dr. Noeggerath of cauterizing the diseased tissue with the galvanic cautery, and subsequently, as often as granulations sprang up, removing them with strong mineral acids. By this means, it was believed that epithelioma in the cervix could always be controlled.

DR. MUNDÉ had employed the method described by Dr. Gillette in numerous cases, with good results. In one case, the patient was in an extremely low condition, and was expected to die of septicemia within a week. The improvement was so great after the operation that one could hardly recognize her. Secondary hemorrhage had occurred in but one case, which had already been reported to the Society. He believed that the danger from this source was less after the use of chloride of zinc than after that of actual cautery. Recently he had had a case in which he thoroughly seared the surface of an epithelioma of the cervix; all oozing ceased, a tampon was applied, but he was called up in the night, on account of secondary hemorrhage. The raw surface left by the slough from the chloride-of-zinc application rarely heals over by healthy granulation, although every effort should be made to attain that end.

DR. W. M. CHAMBERLAIN had had the same good effect temporarily upon carcinoma of the cervix uteri by the application of the zinc-chloride solution; it had never been followed by secondary hemorrhage. He had, however, been troubled somewhat in making the application by the difficulty in preventing the escharotic coming in contact with the vaginal mucous membrane and leading to an eschar.

DR. MUNDÉ described the method of applying the zinc chloride, as proposed by Dr. Sims, which was a perfectly safe one, although it was very difficult to keep the zinc from the vaginal wall.

DR. WM. M. POLK made the following remarks on

#### THE INDICATIONS FOR HYSTERECTOMY.

"It is a well-established rule in surgery that so desperate an operation as Freund's is now acknowledged to be is not to be performed unless there exists reasonable hope of a permanent cure. In extirpation of the uterus a permanent cure becomes impossible the moment the pelvic glands become infected, they being so placed as to forbid any attempt at their removal. The immense number of lymphatics running from the uterus, and their close connection with the pelvic glands, make it almost a matter of certainty that in every case of cancer the latter speedily become infected. There is no question but that this implication may exist sometimes before the glands become enough enlarged to be recognized, so that in any given case it would be impossible for one to say with certainty that the disease was confined to the uterus

merely because no indurations or enlargements were to be felt in the surrounding tissues.

In uterine cancer the disease commonly begins at the cervix near the external os, and extends upward as well as outward. If, from the local and general conditions present, we had good reason to believe that the disease was confined to the cervix, and such was actually the case, amputation of the entire cervix, an operation comparatively safe and easy, is all that would be required. Should the disease have extended into the body, it would surely have reached the lymphatic glands, for the time required for the former is ample for the latter. Such cases would, therefore, be beyond any *curative* treatment, Freund's or other, palliation being all that is possible.

Touching the few cases of cancer which begin in the uterine body, it is simply a question as to the time of recognition. In the early stages they are regarded as instances of hypertrophy of the mucous membrane with what are called granulation formations; and as such are treated with the curette. Should such a case be recognized as cancer, before there was any decided enlargement of the uterine body, perhaps it would be fair to look upon it as one fit for Freund's operation, for prior to such enlargement the chances of glandular implication are remote. But cases of primary cancer of the uterine body being comparatively rare, and their early recognition by no means easy, the opportunity for the operation in question, even here, is by no means common.

In sarcoma of the uterus the operation holds a strong position. In this disease glandular infection is far less rapid, the disease remaining localized longer than pure cancer, patients dying as often from septicemia and pyemia, resulting from the repeated efforts with the curette, as from the unmolested disease.

A large proportion of these cases can be recognized before glandular infection has occurred, even before there is any decided enlargement of the uterus; consequently, when everything is favorable not only for its operation, but for its early justification and cure. The disease, however, is very rare.

I may sum up by saying that in cancer of the cervix, the common form of uterine carcinoma, Freund's operation is contraindicated; for the disease, if local, can be eradicated by the amputation, if necessary, of the entire cervix, whereas, if glandular infection has occurred, a cure is impossible, palliative measures being then all that are justifiable. From this category I would exclude Freund's procedure, for it is, in my opinion, less useful and far more dangerous than a combination of the many now in vogue. In primary cancer of the body of the uterus it is justifiable, provided the diagnosis be made before glandular infection has occurred; but this is a difficult, and, in some instances, an impossible question to determine, and that, too, in a rare disease.

In sarcoma of the uterus it is fully justified, and the conditions calling for it can be determined with reasonable certainty, yet the



disease is far from common. Consequently, the field open to the operation is very narrow."

SECONDARY HEMORRHAGE AFTER OPERATION FOR LACERATION OF THE CERVIX UTERI.

DR. P. F. MUNDÉ related the following cases:

The first case was that of a hospital patient in whom he sewed up a lacerated cervix and perineum, and did Stoltz's operation for cystocele, all at one sitting. Catgut sutures were used on the cervix only. Arterial hemorrhage occurred from one vessel, but was checked by the sutures. Six days later, profuse hemorrhage occurred from the vagina, which undoubtedly came from the cervix, necessitating the use of hot alum-water, and finally ice-water and vinegar, which arrested the bleeding. Had this not been done, it must have become necessary to tear open the perineum and tampon the vagina. Removal of the stitches subsequently showed that union had taken place.

The second case was that of a private patient, upon whom he repaired the lacerated cervix without any particular difficulty. While inserting a suture, an exposed pulsating artery was noticed. Eight silver-wire sutures were introduced. On the fifth day, the same day on which secondary hemorrhage occurred in the first case, he was called to see this patient, and found arterial hemorrhage so profuse that, after vainly endeavoring to check the bleeding by compressing the whole cervix with *pincés hémostatiques*, he found himself compelled to hastily tampon the vagina with flat alum tampons, whereby, fortunately, hemorrhage was arrested. Probably the artery referred to had been gradually cut into by one of the wire sutures. The blood gushed from the external os. The sutures had since been removed, and the cervix found perfectly united. He wished to refer, first, to the danger of secondary hemorrhage after trachelorrhaphy, and, second, to this occurrence as a counter-indication to doing both the perineal and cervical operation at the same sitting.

FIRST COITUS ATTENDED BY EXTENSIVE LACERATION OF THE WALL OF THE VAGINA AND PROFUSE HEMORRHAGE.

DR. MUNDÉ was called to see a girl, twenty-two years of age, whom he found pallid and anemic from the loss of blood. She had been married the day before, and but a single connection had taken place. It was not attended by severe pain nor by immediate hemorrhage, but some hours afterward she observed bleeding from the vagina, and sent for a physician, who gave ergot, but without benefit. He made no examination. Then another physician put ice into the vagina, but also without stopping the hemorrhage. Dr. Mundé examined the hymen for the source of the bleeding, but found that it came from a point higher up. Introducing a Sims speculum, the vagina was seen to be ruptured on the left side for a distance of about two inches and a half, extending

from one inch above the introitus up into the right fornix. The uterus was retroverted. He assumed that there was a disproportion between the male and the female organs. The bleeding was checked by firm tamponade with cotton disks. When the patient was seen again, a week later, the wound was partly healed. Two years ago he had attended a case of profuse hemorrhage from rupture of the hymen up into the vagina along the urethra during first coitus, in which tamponade also was required to check the bleeding.

## REVIEW.

MINOR GYNECOLOGICAL OPERATIONS AND APPLIANCES. By J. HAL-LIDAY CROOM, M.D. 2d Ed. Edinburgh, 1883: E. & E. Livingstone.

Surely there is no dearth of text-books on gynecology. Considering the number of authors who have presented their works to the medical public within the last five years, and the extensive sale which has attended their publication, the medical mind must have become commendably illuminated upon this subject. The second edition of Dr. Croom's book appears in a very attractive form, and though he says it is "considerably enlarged," it is still a *hand-book*, and not too large to be carried about in one's coat-pocket. As appears from the title, the book confines its attention to the *minor* operations of gynecology, including the operations upon the rectum, perineum, cervix and bladder. There is also an intelligent description of the various methods for treating uterine fibroids per vaginam, and of the customary operations upon the external genitals. A perusal of these pages suggests to how great a degree gynecology is a *manipulative* art, and he who would become useful in this department must be skilful with his fingers, as well as quick-witted. The gynecology of Edinburgh bears closer resemblance to that of New York than does the gynecology of any other European capital; therefore the descriptions and recommendations of Dr. Croom seem entirely familiar, intelligible, and wholesome. A number of well-executed lithographic plates, giving various relations of the pelvic organs, add to the value of the book, which is a good one to have, and a good one to use.

A. F. C.

## ABSTRACTS.

1. Thomas More Madden (Dublin): **Observations on Puerperal Fever** (*Read before British Medical Association, Annual Meeting, August, 1883*).—Metria has always been a favorite subject of obstetric controversy. And as long as our registration reports show that each year some 5,500 women die in this country from an infective disease consequent on parturition, it cannot be superfluous for us to reconsider its prevention and treatment. Nor does it matter, as much as some appear to think, by what term we distinguish this malady, whether it be that we still hold to its old-fashioned name of puerperal fever, or

whether we speak of it as metria, puerperal septicemia, spræmia, or any other of the numerous more modern designations, provided we recognize (what some recent authorities have emphatically denied) that there is a specific infectious disease consequent on parturition; and that this disease, whether epidemic or sporadic, assumes different types, being largely modified by the circumstances under which it occurs, viz., by the intensity of the septicemic intoxication, the previous condition of the patient, and the prevailing epidemic constitution of the atmosphere. Therefore, as it is obviously unwise, in dealing with a malady of such gravity, to waste attention that should be given to more practical consideration, on unnecessary pathological subdivisions and hair-splitting distinctions, Dr. More Madden argues that the old name of puerperal fever, which has the advantage of expressing no debatable theory, should be still retained.

At any rate, by whatever name we call the complaint, it is certain that between the years 1847 and 1880 no less than 164,446 deaths have been registered in England as the result of a septic puerperal disease. These figures by no means represent fully the actual mortality from metria, as in many instances such deaths are not duly registered. But still they suffice to show that we are yet far from having attained to that prompt "stamping out of puerperal fever" which had been so confidently anticipated from the recent advance of the practice of midwifery, and particularly from the modern antiseptic treatment of puerperal patients.

Puerperal fever may arise from infection with the poison of other zymotics, such as erysipelas, scarlatina, and typhus fevers. It may also be introduced from without by retro-inoculation with septic germs from another puerperal patient. Or it may be caused by auto-inoculation with self-generated septic matter developed within the system of the patient herself.

The gradually increasing virulence of successive inoculations with the exudations of peritoneal inflammation is well recognized. And the gradual evolution in this way "from traumatic infectivity to the intensified virulence of malignant septicemia," which has been described by Dr. Burdon Sanderson and other recent pathologists, is practically illustrated by clinical experience in our lying-in hospital. There we observe that before epidemic outbreaks of puerperal fever, for a short time isolated sporadic cases of metria are noted. These at first are separated from each other by a long interval between the cases, which gradually becomes shorter until the disease is epidemic. At the same time, its character changes from a mild form of metria to the most malignant and generally fatal type of puerperal septicemia, which, in many instances, can only be arrested by the complete closure of the hospital for some time.

This leads us to consider briefly the influence of lying-in hospitals in the spread of epidemic metria. And the writer feels bound now to say that, whereas he had long maintained himself, and taught others that it was quite possible, even in the largest of those hospitals in which a great number of puerperal patients were aggregated together, to obviate effectually all risk of epidemic puerperal fever by the strict observance of careful hygienic and antiseptic precautions, he can no longer hold that view.

For many reasons, large maternity hospitals would be desirable were



they only safe. And there can be nowhere a better managed and better officered institution of this kind than the great lying-in hospital of Dublin, founded by the self-sacrificing zeal of an Irish obstetrician, and in which, from its foundation to the present time, some two hundred thousand women have found an ever-open shelter in their hour of direst trial. But notwithstanding the benefits thus conferred by this and other large maternity hospitals, the many lives therein rescued from the perils of child-birth, and their great advantage as centres of obstetric education, it must be admitted, however reluctantly, that all these advantages are more than counterbalanced by the fact that in all large hospitals where a number of puerperal women are confined together, a specific puerperal atmosphere is necessarily created. And thus the germs of septicemia are developed with a rapidity, and too often attain a virulence unknown under any other circumstances. Moreover, such institutions are not only the favorite habitat of puerperal fever, to which those therein confined are therefore particularly exposed. But also they must be further regarded as centres from which, at certain intervals, and under certain circumstances, the virus of metria radiates in occasional outbursts of epidemic puerperal disease.

In a former discussion on this subject, it was shown by Dr. Evory Kennedy, himself an ex-master of the institution, that puerperal fever had haunted the Dublin Lying-in Hospital, or been endemic therein, for ninety-three years out of the hundred and eleven years which had elapsed since its foundation. In other words, the hospital had only been free from metria for eighteen years during this long period. If to this fact we only add that it is beyond controversy that at the present time the mortality after parturition is five times greater in large lying-in hospitals than it is amongst puerperal women in the general population, we have ample reasons for agreeing with Dr. Evory Kennedy and those who with him would fain close all such hospitals.

There are several alternatives for our present system of large maternity hospitals. It has been proposed to scatter lying-in patients through the general hospitals. But this would be most objectionable on several grounds, and would expose such patients to far greater risk of septicemia than they now run in special maternity institutions. It has also been recommended that medical assistance should be afforded in the patient's own residence. And this, though, as a rule, far safer than either of the former plans, is not always feasible nor desirable. The third and best mode of solving the difficulty is to substitute a sufficient number of small cottage hospitals in which parturient patients would be comparatively free from the specifically poisoned puerperal atmosphere of those large and over-crowded institutions which are but splendid monuments of the mistaken philanthropy of a former age.

In reference to the causes of puerperal fever, Dr. More Madden also calls attention to the probability of traumatic infection in cases of laceration of the cervix uteri during labor, especially when resulting from the abuse or premature application of the forceps. Under these circumstances, a ready channel is opened for the auto-inoculation of the patient with a septic matter in the lochial discharge, and thus this common accident affords a key to the etiology of puerperal septicemia in many cases.

The prevention, rather than the treatment of puerperal fever, should

be a matter of greatest interest to the obstetric practitioner. It should, therefore, be our care to prepare before delivery the constitution of every patient we are engaged to attend for the approaching critical time, by due attention to general hygiene and nutrition, and above all, by the administration of some ferruginous tonic, such as the tincture of the perchloride of iron, for a couple of months before confinement. After labor the functions of the nurse are most important in the prevention of septicemia. Nor can too much stress be laid upon the absolute necessity of unremitting attention to the sanitary surroundings of the patient, as well as the most scrupulous personal cleanliness. And above all, the removal, by frequent sponging, and warm antiseptic irrigations, of all lochial or other discharges, the decomposition of which might give rise to auto-infection.

With regard to either the prognosis in cases of puerperal fever, or to the treatment of this disease, it would be impossible to make any generally applicable observations, as both are entirely dependent on the particular form of metria, the epidemic constitution of the atmosphere then prevailing, and the special circumstances and condition of the patient, in each individual case.

It may be said, however, that although there can be no question of the general fatality of true epidemic puerperal fever, still the present type of the disease is either decidedly less malignant, or else we have materially improved in its treatment, since a distinguished obstetrician some years ago asserted that he would "as soon be called to a case of hydrophobia, as to one of puerperal fever;" or when, more recently, the late Dr. Stokes assured the Dublin Obstetrical Society that, in his experience of over forty years, he had never seen a single instance of recovery from puerperal fever. This certainly is not our experience at the present day, and there are probably few obstetricians who have not met with many instances of recovery from metria. Within our own time, the prevailing type of puerperal fever has changed repeatedly, in successive epidemics. We now seldom, if ever, meet with that epidemic form of puerperal metro-peritonitis, for which, in our student days, mercury with opium, and free depletion by leeching, were so generally prescribed. At that time in the Rotunda Hospital, the patient's abdomen, under such circumstances, would be unhesitatingly covered by what the late Dr. McClintock graphically described as "a poultice of leeches." And Dr. More Madden retains a lively recollection of the benefits derived in appropriate cases from that line of treatment. A few years later, when he first became one of the medical staff of the same hospital, two different forms of puerperal fever were brought under observation—one with marked uterine pain, tenderness, and distention of the abdomen; the other without any localized pain. Both were accompanied by a low typhoid condition, and obviously required stimulation, especially the free use of turpentine, not only externally, applied by stuping, but also internally, by the mouth or by the rectum, as long as its use was not prevented by vomiting or purging.

At the present time, however, the form of puerperal fever most prevalent is of a distinctly remittent type. In several cases recently seen by the writer, in consultation with other practitioners, the fever was of a tertian character. More commonly, however, there were daily matutinal remissions. In the second week of this form of puerperal septicemia,

the temperature and pulse often fall each morning to little above normal, and gradually rise during the afternoon, until in the evening the former may have reached  $105^{\circ}$ , and at the same time the pulse has risen to above 120.

In the treatment of this remittent puerperal fever, our main therapeutic reliance must be placed on quinine. This should be given in three or four grain doses, at intervals of three or four hours, the patient's strength being meanwhile maintained by suitable stimulants and nutriment. With few exceptions, all the cases of puerperal fever recently seen by the writer were of an asthenic character, presenting all the symptoms of so-called malignant puerperal septicemia, and hence were not fit cases for any form of depletion, but on the contrary urgently demanded the judicious administration of stimulants and nutriment; nor should hope be abandoned even in the most apparently hopeless cases of this kind, as long as these can be introduced and retained by either the stomach or rectum.

Whatever other treatment may be required in any case of puerperal septicemia, there is one measure which should never be omitted in any case of the kind. This is the employment twice each day of warm antiseptic intrauterine and vaginal injections, or still preferably of similar irrigations. The use of these for the purpose of washing out thoroughly all septic matter from the cavity of the uterus is self-evident. At the same time it is necessary to impress on our nurses the necessity of using the ordinary vaginal syringe, with far more caution than is generally observed by the ordinary class of midwives, so as to avoid the risk of either injecting air into the open uterine sinuses, or that of forcing the injected fluid through the patulous Fallopian tubes into the peritoneal cavity. The precise antiseptic solution used in this way matters comparatively little, so that it accomplishes its object of washing away all vitiated exudations or septic matter, and of bringing about a healthier condition of the uterine walls and vessels. He had used in this way, with almost equal advantage, weak solutions of carbolic acid, permanganate of potash, turpentine, tincture of iodine, sanitas, and terebene. And where none of these were at hand, had found an excellent substitute in simple chamomile tea. Care should be taken not to employ over-strong antiseptic intrauterine injections.

T. M. M.

**2. Breisky (Prague): Parovarian Cyst of the Right Side, with Twisting of the Pedicle. Death from Syncope During Anesthesia with Methylene Bichloride, So-Called** (*Reprint from the Prager Med. Wochensh.*, 1883, No. 22).—The patient who suffered this accident was prepared for ovariectomy, and, on account of her weak condition, choice was made of an anesthetic which was supposed to be the *safest* possible. After the anesthesia had been continued for ten minutes, the patient suddenly became livid, and the radial pulse disappeared. Respiration continued for three minutes longer, and then, in spite of all efforts at resuscitation, the patient died. Only four drachms of the anesthetic had been used, and no fault could be attributed to the assistant who administered it, or to the apparatus. The preparation which was used was that which is made by Robbins & Co., of London, labelled *Bichloride of Methylene*, formula  $\text{CH}_2\text{Cl}_2$ , and was not methylene bichloride, but a mixture of alcohol and chloroform. The autopsy revealed no important structural changes in the vital organs. The tumor was as described in



the title, the twisting of the long pedicle being quite unusual in parovarian cysts. A. F. C.

**3. G. Braun (Vienna): Death Occasioned by the Entrance of Air into the Veins of the Uterus** (*Wien. Med. Wochenschr.*, July 7th, 1888).—Three cases are narrated by the author in which death followed the introduction of air into the veins of the uterus. The first case was Olshausen's, in which, after the birth of twins, the uterine douche was used, death following in twenty minutes. The second case was Litzmann's: the uterine douche was used to accomplish artificial abortion; death occurred in a short time, and in this as well as in the previous case, it was found, at the autopsy, that air in abundance had been forced into the veins of the uterus, and had made its way into the vena cava ascendens, the veins of the heart, etc. The third case was in the service of the author. The patient had been delivered, by a midwife, of child and placenta, upon the left side. The midwife had then laid the patient upon the back, and was practising massage upon the uterus, when the patient gasped and, in spite of professional assistance which was almost immediately at hand, died in a few minutes. The author's conclusion was that a volume of air entered the uterus when the change in position was made, from side to back, and that manipulation of the uterus, instead of expressing the air outward, only drove it inward, with fatal consequence. A. F. C.

## ITEM.

ARRANGEMENTS have been made with competent specialists in the United States, England, France, Germany, and Italy, to furnish to this JOURNAL regular QUARTERLY REPORTS ON THE PROGRESS IN OBSTETRICS AND GYNECOLOGY in their respective countries, similar to that from France in the present number. Thus each number of this JOURNAL will contain a Report from at least one of these countries.

## CORRECTION.

By an oversight, the word "spondylo-listhetic," in Dr. Neugebauer's article on that subject in the September number, was misdivided; the hyphen should have been between the l and the o in the spondylo, thus: spondyl-olisthetic (Greek σπονδυλος, vertebra, and ὀλισθαίνω, to slip).

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### OPHTHALMIA NEONATORUM AND ITS PROPHYLACTIC TREATMENT.

BY  
WALTER P. MANTON, M.D. (Harvard).

OPHTHALMIA Neonatorum is a disease of great importance and danger. It is important because it is one of the most frequent diseases of the new-born child with which the practitioner has to deal, and dangerous because, if left to itself, it runs a rapid course, producing corneal cloudiness, ulceration, perforation, etc., and a total destruction of the function of vision.

Of the frequency of ophthalmo-blennorrhœa in early life, Vogel<sup>1</sup> states that 80 to 90 per cent of all cases met with in practice affects the eyes of the neonatus.

The statistics of Germany and Austria place the blindness found in various asylums and caused by this disease, as varying from 33<sup>2</sup> to 75<sup>3</sup> per cent; and although this percentage is far above that found in private practice in the United States, yet it occurs often enough to make the disease a *bête noir*, an object of dread.

The frequency of such sad results may be explained by the fact that the disease is generally brought to the notice of the physician, if at all, when it is too late for him to render any assistance, or hope of saving the eyes.

If the importance of sore eyes in the baby could be impressed upon mothers and nurses, and cases could be treated from the beginning, the results would be far from disastrous,

<sup>1</sup> Lehrb. d. Kinderkrankh. Stuttgart, 1880, p. 71.

<sup>2</sup> Königstein, Archiv f. Kinderheilk., Bd. iii., 1882.

<sup>3</sup> Gräefe, Volkmann's Klinische Sammlung, No. 192.

for as Williams<sup>1</sup> says, "no disease is more fatal to the eyes when neglected or improperly managed, . . . but on the other hand, none offers better results from judicious treatment, for even in its worst form it is always curable."<sup>2</sup>

Not every inflammation of the conjunctiva of the eyes is a purulent ophthalmia, and yet in the early stage it is often difficult to determine whether the conditions present are harmless and will soon subside, or vicious and progressive.

It is therefore necessary for the accoucheur to demand of the attendant that he be notified at the first indication of trouble with the eyes.

Ophthalmia neonatorum begins usually several days after birth. According to Königstein,<sup>3</sup> who found fifty-one cases of the disease among 1,092 children, the period of incubation was as follows:

The blennorrhea attacked the 1st day    6 children.

"	"	2d	"	14	"
"	"	3d	"	5	"
"	"	4th	"	7	"
"	"	5th	"	4	"
"	"	6th	"	5	"
"	"	7th	"	6	"
"	"	8th	"	2	"
"	"	9th	"	2	"

From this we see that in the greatest number of cases the blennorrhea appears before the fifth day. This has also been corroborated by the observations of many others, so that we may safely say that all cases of ophthalmia neonatorum occurring *after* the fifth day are due to infection after birth from dirty hands, lochia, etc.

The first symptom noticed is a slight reddening of the skin of the upper eyelid, accompanied by a watery discharge from the eye, and photophobia. If the conjunctiva is inspected, it will be found reddened and velvety. By the next day, or even in a few hours, the lids, particularly the upper, will be found enormously swollen and livid, and the secretion, becoming more and more purulent, is poured out in quantity. The lids often

<sup>1</sup> The Diagnosis and Treatment of the Eye. Boston, 1881, p. 88.

<sup>2</sup> R. Liebreich, Medical Times and Gazette, 1871, ii., p. 763.

<sup>3</sup> L. c.



become glued together by the dried pus along their edges, and the pent-up and increasing secretion behind causes them to bulge forward. If at this stage the lids be carefully drawn apart—and the greatest care is necessary lest the cornea, perhaps already damaged, be ruptured—the conjunctiva, bathed in pus, will be found greatly injected, and hemorrhage will occur even with the most tender handling.

“If this condition is not soon changed for the better,” writes Williams,<sup>1</sup> “the defective nutrition, the pressure of the swollen lids, and maceration in the unhealthy secretion, causes haziness of the cornea, and then ulceration and perforation.”<sup>2</sup>

As to treatment. The custom of squirting milk from the mother's breast into the affected eyes; the application of salves, poultices, and, as sometimes happens among the lower classes, pieces of placenta, is, of course, not only useless, but positively harmful, and is not so much a practice of the dark ages, but that it is seen often enough nowadays.

But whether the milder methods are adopted, keeping the eyes clean by syringing out at frequent intervals with tepid water, and the application of mild collyria, as advocated by Williams, and which is gradually superseding the harsher treatment, or whether the conjunctiva is brushed every day with a 2–4 per cent solution of nitrate of silver, or lapis mitigatus is used, must depend entirely upon the individual case and the preferences of the physician. The local treatment need not be further dwelt upon here, for all text-books on the eye now devote many pages, and indeed whole chapters to it, and the practitioner has but to select; but there are several minor points which it may not be amiss to mention.

Ophthalmo-blennorrhœa very frequently affects weakly and premature infants, the pain<sup>3</sup> is often great, and the babe worn out with suffering, which at this period of life it is little able to bear, gradually sinks, and often dies from exhaustion. It is therefore necessary that during the progress of the disease

<sup>1</sup> Boston Med. and Surg. Journal, vol. xcii., 1875, p. 89.

<sup>2</sup> I cannot agree with Gaunt (vide AM. JOURN. OBSTET., July, 1882), nor do I think the majority of observers will bear out his statement, that “if untreated the eye is well in from four to six weeks.” Such cases occur, but as a rule, if left to themselves, more or less damage to the cornea results.

<sup>3</sup> Ware is not of this opinion; vide AM. JOURN. OBSTET., April, 1882.

the nutrition of the child be looked after, and proper food, either breast milk which it can digest and appropriate, or artificially prepared food, should be given sufficiently often to sustain the strength.

The hygienic surroundings as regards air and ventilation should also be the best possible.

If only one eye is affected, the other should be carefully bandaged, and the child's hands tied down to the sides, to prevent conveyance of the infectious material to the sound eye. The child should also lie on the side of the diseased organ, for the blennorrheal secretion is often poured out in such quantities as to run streamlike over the cheek, where its path is frequently marked by excoriations and inflammation.

If the well eye becomes affected, the bandage should be removed at once, having failed to accomplish that for which it was intended.

On account of the highly infectious character of the secretion, the child should come in contact with as few persons as possible, and all bits of rag, cotton, etc., used about the eyes, should be burned, and the hands of the attendant washed after each treatment.

If we now go back and consider the etiology of the disease, it must be confessed that it is still surrounded by darkness, through which the light is just beginning to break. In the text-books we find a great variety of opinions.

Stellwag von Carion<sup>1</sup> says: "It is more than likely that the influence of dazzling light upon the eyes of the new-born can produce an ophthalmia of this kind. This may also be said of sudden change of temperature, which is so often given as a cause. It is undeniable that offensive odors from excrements, irritating smoke, vapors, and steam, and damp air in a room, filthy conditions of linen and child's body, as well as uncleanness of the hands of the attendant, are the next most frequent causes of the disease."

Arlt,<sup>2</sup> on the other hand, denies all of the above, admitting only that cold may play a very unimportant part, and states that "the only cause (of blennorrhea) is proved to be infection during or after birth."

<sup>1</sup> Lehrbuch d. Praktischen Augenheilk. Wien, 1867, p. 390.

<sup>2</sup> Klinische Darstellung d. Krankh. d. Auges.

Hausmann claims that normal vaginal secretion will produce the affection. If this were so, why every new-born child does not have an ophthalmo-blennorrhea is astonishing; but his own experiments, and those of Königstein's, do not confirm the statement. Marjolin and Davis' succeeded in inoculating the eyes of cats with a *muco-purulent* vaginal secretion from two girls with leucorrhœal discharge, and produced a purulent conjunctivitis—an experiment which has repeatedly failed when dogs and rabbits have been used. This would seem to indicate, as Carter<sup>2</sup> says, that "its seeds seldom germinate unless they are received upon prepared soil; but given this one condition, they germinate unfailingly." It is rather a curious fact that the mere contact of pus with the eye will not produce a purulent ophthalmia, as the many cases of lachrymal abscess which often discharge their matter freely over the conjunctiva without harm, prove. Most ophthalmologists and obstetricians are now of the opinion, however, that ophthalmia neonatorum is produced by a *specific virus which is identical with that of gonorrhea*.

Exactly what the "active principle" of this virus is, microscopic investigation and experiment have not yet determined.

The presence of Neisser's<sup>3</sup> micrococci in the secretion from the eye was at one time supposed to be proof positive of the gonorrhœal character of the infection, but more recently these micrococci have been found not to be pathognomonic of gonorrhea.

Credé,<sup>4</sup> in his last article on ophthalmia neonatorum, gives as the predisposing causes of the disease:

1. A protracted second stage in labor.
2. Premature rupture of the membranes.

He considers anything over *one hour* protracted. Of 303 cases, the second stage lasted:

<sup>1</sup> Cited by Königstein.

<sup>2</sup> Lancet, 1873, p. 871.

<sup>3</sup> Centralblatt f. d. Med. Wissenschaften, No. 28, 1879.

<sup>4</sup> Separatabdruck aus d. Archiv f. Gynäkologie, B1. xxi., Heft 2, 1883.



Year	$\frac{1}{4}$ H.	$\frac{1}{2}$ H.	$\frac{3}{4}$ H.	1 H.	2 H.	3 H.	4 H.	5 H.	6 H.	OVER 6 H.
	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES	TIMES
1870	7	7	1	3	3	1	1	2	0	2
1871	4	0	0	2	4	0	2	1	0	2
1872	6	7	1	11	1	2	4	1	0	2
1873	8	7	7	3	2	2	0	0	1	4
1874	5	4	3	4	5	6	2	2	1	2
1875	7	8	2	3	7	4	1	1	1	1
1876	5	3	5	4	3	2	1	0	1	1
1877	4	1	2	4	4	1	1	1	0	1
1878	7	10	3	2	2	1	2	0	0	1
1879	7	8	1	8	5	1	2	1	0	4
1880	2	3	0	1	2	0	0	0	0	2
1881	0	0	1	0	0	0	0	0	0	0
1882	0	1	0	1	0	0	0	0	0	0
	62	59	26	46	38	20	16	9	4	22
	20.4%	19.1%	8.5%	15.5%	12.2%	6.6%	5.3%	3.0%	1.3%	7.3%

It is easy to understand that a prolonged period of expulsion, as well as premature rupture of the membranes (dry labor), by bringing the eyes of the fetus longer in contact with the vaginal secretion, greatly facilitates inoculation.

Boys, from their size and consequent somewhat tardier expulsion, are relatively oftener affected than girls; and the children of multiparæ than those of primiparæ. This latter point may be perhaps explained by the fact that women who have borne children more frequently suffer from vaginal discharges, than those who have not.

Hecker<sup>1</sup> has compiled an interesting tables howing that—at least in Munich—ophthalmia neonatorum is more prevalent during certain months of the year than others.

Month.	Number of Living Children Born.	Number of Affected <sup>1</sup> Children.	Per Cent.
January.....	1683	48	2.8
February. . . . .	1662	39	2.3
March.....	1752	56	3.2
April . . . . .	1616	36	2.2
May.....	1676	38	2.3
June . . . . .	1479	31	2.1
July.....	1395	35	2.5
August . . . . .	1303	25	1.9
September.....	1393	26	1.9
October. . . . .	1490	41	2.8
November.....	1423	24	1.7
December.....	1559	31	1.9
Total . . . . .	18451	430	

<sup>1</sup> Archiv f. Gynäkologie, Bd. xx., Heft 3, p. 395.

We now come to the most important point in our consideration of ophthalmia neonatorum, viz.: its prevention. The prophylactic treatment of this disease is no new thing, for as long ago as the time of Aetius,<sup>1</sup> it was recommended, after having cleansed the eyes of the new-born child, to drop oil between the lids.

More recently, various methods have been tried.

These generally consist in washing out the vagina with antiseptics before and during labor;<sup>2</sup> immediately wiping the eyes of the child as soon as head is born with cotton or a bit of rag wet in carbolic, salicylic, or boracic acid solution;<sup>3</sup> irrigation of child's eyes with carbolic solution or plain water,<sup>4</sup> etc., etc.

But, in private practice, some of these methods are inconvenient, and all of them, although they may have diminished the percentage of ophthalmo-blennorrhoea somewhat, are not the panacea, the prophylactic, on which to rely.

It is to Prof. S. F. Credé, of Leipzig, that the thanks of the profession are due for the introduction of a simple and reliable method with brilliant results; for I believe that when the percentage of a disease can be brought from ten to nothing, the word "*brilliant*" may be applied to the results with propriety.

Credé's<sup>5</sup> first attempts were directed to the mother. Each pregnant woman entering his hospital with gonorrhoea or leucorrhoea had the vagina washed out with an antiseptic solution at frequent intervals; the lying-in had the vaginal douche every half-hour. This diminished the frequency of ophthalmia neonatorum somewhat, but yet was not altogether satisfactory. Attention was now turned to the child, and a weak solution of borax (1:60) was dropped into the eyes. This, again, not proving successful, in December, 1879, C. left off washing out the vagina, and began cleansing the eyes of the babe with a solution of salicylic acid (2:100). A single drop of a solution of nitrate of silver (1:40) was then allowed to fall between the lids, and the eyes were kept cool for twenty-four hours by pledgets of cotton wet in the two-per-cent salicylic solution.

<sup>1</sup> Tetrabiblos, Basileæ, 1542, IV. Sermo cix., p. 180; cx., p. 183.

<sup>2</sup> Hausmann and others.

<sup>3</sup> Haltzmann, Olshausen, etc.

<sup>4</sup> Walton, etc.

<sup>5</sup> Archiv f. Gynäkologie, Bd. xvii., p. 50; *ibidem*, Bd. xviii., p. 367.

This latter was soon abandoned, however, for it was found that from carelessness and improper attention of nurses the cotton would often become dried to the lids, and require soaking to be removed.

Finally, a two-per-cent solution (1:50) of nitrate of silver was used after the bath, and no further attention paid to the child's eyes.<sup>1</sup>

The results were truly astonishing, for although the mothers of many of the children treated suffered from syphilis and gonorrhea, of 1,160 cases only one or two had ophthalmia neonatorum, and these in its lightest form.

This practically reduced the percentage of the disease to 0.

The beneficial action of the nitrate of silver solution was not confined to ophthalmoblenorrhoea alone, for its application greatly diminished the percentage of catarrh, conjunctivitis, blepharitis, etc.

Although such perfect results have not been obtained by other observers, it has not been due to the method, but to the imperfect manner in which it has been carried out.

Königstein saw but nine cases of ophthalmia neonatorum among 1,250 (0.72 per cent) children thus treated, with a great diminution of catarrhal, etc., inflammations. In the same clinic, of 1,092 children *not* treated, 51 (4.76 per cent) were affected with the disease.

Felsenreich reports of 3,000 children 58 (1.93 per cent) had ophthalmoblenorrhoea. Previous to the inauguration of the nitrate of silver treatment, of 1,887 children 82 (4.34 per cent) were affected.

In private practice, where, in the majority of cases, cleanliness and hygienic surroundings are far better than can be expected in a hospital where hundreds and thousands of women are delivered yearly, the results of Credé's method should be perfect. But the treatment must be thorough. After the bath, the child's eyes must be wiped with cotton or a bit of rag wet in clean water. This should be done by the physician himself, as nurses are too apt to leave a line of smegma along

<sup>1</sup> Fürst ("Klinische Mitth. über Geburt und Wochenbett") gives Gustave Braun this priority in introducing the simplified method, but this is a mistake as Credé was the first to use and to publish his experiments with the two-per-cent silver solution alone.



the edge of the lid. Then the lids should be carefully separated by the thumb and forefinger of the left hand, while the right allows a single drop of the silver solution to fall from the dropper on to the middle of the cornea, from which it is diffused over the whole conjunctiva and sac. With a clean bit of rag wet in water, the eyes should again be wiped and dried, to remove any of the silver solution which may have found its way outside; for it would be disagreeable to find at a subsequent visit that the silver had stained the whole orbital region of a dusky color—like a “black eye”—as in a case I once saw.

Further treatment there is none. The child is dressed, and the weary accoucheur may dismiss all anxiety as to future trouble with the eyes from his mind. There is generally no reaction from the silver solution. Sometimes, however, especially in the case of prematurely born children, a slight reddening and swelling of the lids take place, completely disappearing by the next day.

“A simpler and easier method than the above could scarcely be found. At the same time, it is perfectly harmless, and, . . . as far as infection during birth is concerned, really *prevents* ophthalmia neonatorum.”<sup>1</sup>

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#### A REVIEW OF THE METHODS IN GENERAL USE FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.

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BY

CHARLES F. STILLMAN, M.D.

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(Concluded from page 1002.)

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*Conclusion.*—The various systems of treatment detailed in the course of this paper have, with a few exceptions, been before the profession for a sufficiently long period to have their merits understood, and have been employed with varying degree of success, but, on the whole, the mechanical treatment of Pott's disease is considered to be in an unsatisfactory condition.

As before stated, there are two requisites which must enter

<sup>1</sup> Credé, l. c.

into the consideration of this mechanical problem if its treatment be attended with success, viz.:

Arrest of the disease and obliteration of the deformity. Nature herself points out the direction in which force should be applied to relieve the diseased bodies and produce curative results. Who among us has not noticed the position assumed by a patient with the disease in the stage of invasion? The body is held in a rigid position, the head and shoulders being thrown back as far as possible, and in stooping to pick up an object from the floor this position is still maintained, the patient having every muscle exercised to hold the spine perfectly fixed and bent backward, the position being very much that of an equestrian—"head and chest up, the shoulders held back, and the small of the loins well knit in." Were it possible for the patient to retain this position indefinitely, progress of the disease to the stage of deformity would be well-nigh impossi-



FIG. 29.

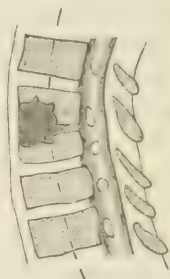


FIG. 30.

ble, but it is a natural tendency in unguarded moments and for the purpose of resting the spine, to bend forward, and bending forward from any cause removes the weight from the posterior processes and proportionately transfers it to the bodies of the vertebræ and their intervening cartilages. The muscles are unable to continue supporting the spine in its unnaturally erect position at all times, and consequently, the patient bending forward occasionally, causes increased pressure to be brought upon the diseased cancellous bodies, hastening absorption of their structure and the formation of knuckle. Nature's indication for the treatment of Pott's disease is to put a splint on the back of the patient which will maintain this erect position, for since the tendency of the disease is to curve the diseased portion of the

spine forward (Fig. 29), the centre of the curve being placed anteriorly, our corrective force should be applied to produce exactly an opposite curve to the diseased one, the centre of such a corrective curve being posterior to the column, Fig. 30. In other words, we must follow nature's lead and curve the spine backward, the tendency of the disease being to curve it forward.

As a result of study in this direction, a new form of lever brace is proposed which is adapted to meet these requirements, so far as they can be met by mechanical means. Its object, like the brace of Dr. Taylor, is, first, to produce extension of the bodies of the vertebræ by backward traction, thus aiming at the arrest of disease, and, second, to exert forward pressure at the seat of the disease, and thus tend to lessen or obliterate deformity; but in order to effect these objects the brace is constructed upon a different plan, a totally distinct order of lever being employed, possessed of special advantages.

To thoroughly understand the principle upon which the new brace is constructed, a patient having a well-defined knuckle is laid upon his back upon a table, the padded edge of which comes to the apex of the deformity, the shoulders and head being allowed to fall downward. (See Fig. 31.)

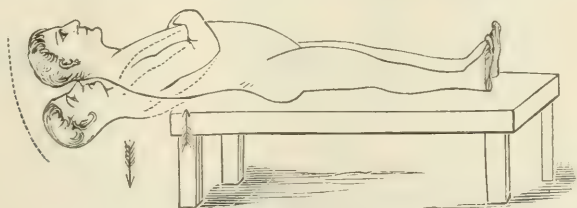


FIG. 31.

You will observe, as the patient's head and shoulders descend, that a physiological and true extension of the spine is effected, the traction force being all that portion of the patient above the seat of the disease. This, augmented by gravity, produces a backward curve of the spine, most marked at the seat of disease. There is also a tendency to obliterate the knuckle, and this partially disappears, unless it be so firm as to render futile any force so applied.

We have thus produced by this position the two effects we consider to be necessary to successful treatment, and have



placed the spine in curves, the reverse of those it held before this posture was assumed. If this position could be maintained indefinitely there would be rapid improvement in the disease, but as this is obviously impossible, we attempt to embody in a brace the forces involved, it being for this purpose constructed in two parts—one to represent the table and the other the backward traction force. The “table” portion of the brace (and by this we mean that portion of the brace which is to produce upon the patient an effect identical with the table as shown in Fig. 31) consists of a firm pelvic band, from which strong padded strips pass upward on either side of the median line to the seat of disease. (See Fig. 32.)

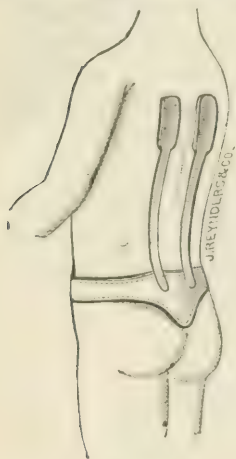


FIG. 32.

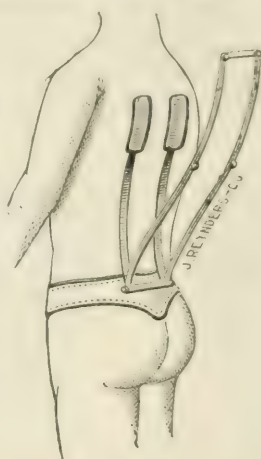


FIG. 33.

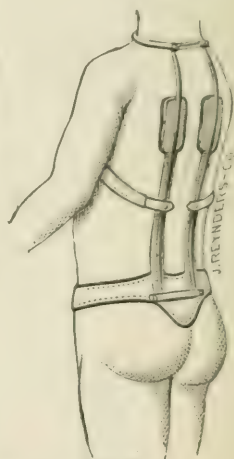


FIG. 34.

Stillman's dorsal lever brace.

The “backward traction” portion of the brace consists of a back frame (see Fig. 33) secured on the pelvic girth by a ratchet, which allows it to be adjusted to any angle with the body, and thus regulates the degree of traction force employed. This may be varied from a simple upright support to a powerful lever at the will of the surgeon, depending entirely upon the angle at which it is thrown out from the body.

The upper part of this traction frame is secured to the body by padded straps connected to a chest T-plate in front, thus avoiding constriction, and when bound down to the body, as in Fig. 34, presents the appearance there shown.

We thus observe that by means of the two parts of this

brace we can obtain the effects desired to be incorporated in a *dorsal* brace, the mechanical action being shown in Fig. 35, R representing the resistance, P the power, and F the fulcrum. It will be observed, after the line FP of the "traction" frame is securely fastened by F to the "table" frame FR, and the whole firmly fastened to the body, that the forward tendency of the upper part of the body would be prevented by the pads at R, and this forward tendency would, at the same time, be acting to force in the knuckle by pressure over the transverse processes of the diseased vertebræ, so that a curative automatic effect would be produced by the brace to keep the body erect, and at the same time improve the deformity.

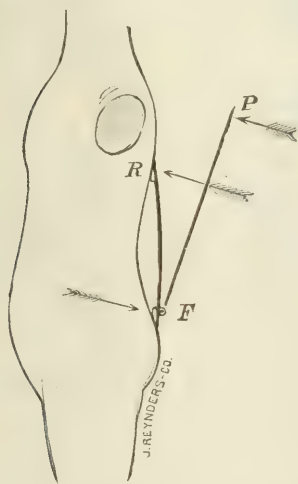


FIG. 35.

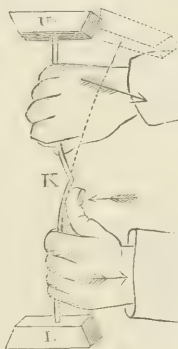


FIG. 36.

Also that the spring effect produced by the setting off of the traction frame, and drawing the body back against it and retaining it there by appropriate straps—would cause the brace to be held more tightly against the back, and produce there a higher degree of fixation of the spine than any form of apparatus in use.

In the beginning of the treatment, it is well to have the traction frame set off at such an angle as to cause considerable pressure upon the sides of the knuckle, and produce thorough extension of the diseased portion; but this angle may be lessened week by week as the case improves, until finally the traction frame lies directly upon the pads, and becomes a

mere fixation brace or support, without any leverage whatever, as in Fig. 34.

To illustrate the action of this brace, if the bent lead strip be again taken, and the extremity L be held firmly with one hand, with the thumb at K, as shown in Fig. 36, it will be found that a comparatively slight pulling force with the other hand will serve to straighten the rod into its original position. This is what we wish to accomplish with this brace—to grasp firmly the lower part of the spine as high as the seat of dis-

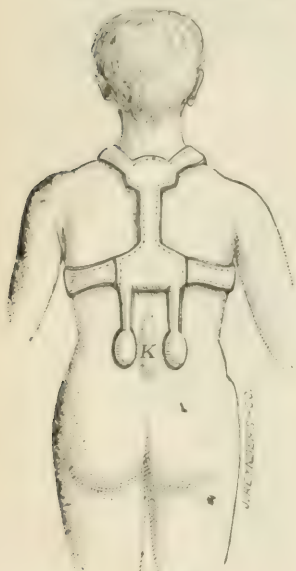


FIG. 37.

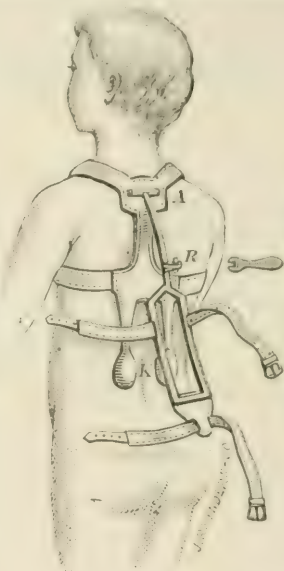


FIG. 38.

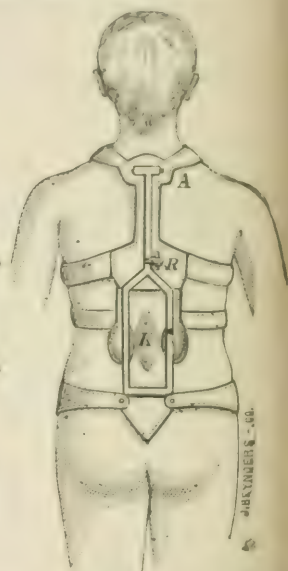


FIG. 39.—Stillman's lever brace for Pott's disease of the lumbar region.

ease—corresponding to the part lying upon the table—and then by force above bend the spine backward sufficiently to relieve the bodies of the vertebræ from pressure, and also effect as much obliteration of the deformity as is practicable. The object of the brace is to fix the spine in the position of riding by a frame provided with a suitable clamp for regulating the backward traction; and thus, by the use of a *very light* frame, we can produce sufficient lever power to retain the spine in any desired position, and as this *backward* power is distributed along the entire dorsal and lumbar spine, and as the *forward* pressure is exerted along the spine below the seat of disease, decreasing from the knuckle to the sacrum,



it will be found that no injurious pressure is exerted at any one point. The brace thus shown is specially adapted for the dorsal region, but when the disease is situated below this, it will be found less efficacious.

To adopt this principle of backward traction to the lumbar region, the patient is laid on the back upon the table, and all that portion *below* the seat of disease is allowed to hang over, the reversal of the position just detailed for disease of the dorsal region. In this manner we produce the extension of the spine, by means of the backward traction of the lower extremity, and produce the pressure upon the knuckle by the edge of the table. It is to sustain these effects that we use the lever brace, and to adapt it to this portion of the spine, we reverse the construction already detailed. If the knuckle be at K, Fig. 37, the table portion of the brace is constructed as there shown, the pads being placed opposite the knuckle, and the whole being firmly bound down to the body without constriction by a T-plate over the sternum. To produce the backward traction, a frame (Fig. 38) is attached to the table frame by a ratchet at A, so that it may be thrown out at any desired angle from the body, depending upon the degree of backward traction desired; and this frame extends to the coccyx inferiorly, and is provided with appropriate straps for its attachment to the body, a rotary ratchet at R assisting to control any lateral curvature which may be present. When this brace is secured to the body, as in Fig. 39, it forms a lever which produces extension of the bodies of the vertebræ, and improves the deformity while holding the spine firmly fixed, these being, as we have seen, the desiderata for successful treatment.

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## ABSTRACT.

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1. Demme: Remarkably Late or Interrupted Psychological Development. The Influence of Acute Diseases on the Child's Mind (*Nineteenth Report of the Hospital at Berne*).—PROF. DEMME prefaces his clinical report with a statement of the normal development of the power of standing, walking, speaking, and thinking. His conclusions are drawn partly from the works of Vierordt, Kussmaul, and Preyer, partially from his own rich experience. He finds that (a) very strongly developed sucklings will balance the head well in the twelfth to fourteenth week; (b) children of medium strength in the fourteenth to sixteenth week; and (c) weak children in the eighteenth to twenty-second

week. That (a) can stand, when supported, in the thirty-fifth to thirty-eighth week, and entirely alone in the fortieth to forty-second; (b) not till the forty-fifth or forty-eighth week; and (c) in the first part of the second year. Children who have older brothers and sisters learn to walk much earlier than those who do not—earliest at the end of the ninth month, often between the twelfth and eighteenth month. Children begin to speak at the end of the first or beginning of the second year—boys later than girls—and to relate what they have seen or done only at about the end of the fourth year. Demme's clinical observations included cases in which a normally advancing development was interrupted suddenly by some acute disease, and afterward advanced again rapidly enough to make up for the lost time, and those in which, under the influence of acute disease, there were abnormalities of development.

1. A boy of good size, born asphyxiated, developed normally till the end of the fifth month. He then began to sleep a great deal, was apathetic, and up to the end of the year there was an absolute stand-still in mental development. Then he became brighter, played, laughed, and cried like a normal child, began to make rapid progress, in the fourteenth month could sit up, in the eighteenth could stand, and in the twenty-seventh could walk well. There had been no pause in the physical growth. He did not speak till the end of the third year, and then only in whispers, but from then on the speech rapidly improved. At the end of the fourth year, there was again a disturbance of speech and a return of the sleepiness; but this passed over in a few months, and from then on the child made good progress.

2. A large boy, of healthy parentage, developed normally till the end of the third month. From then on, he had tremors of the hands, the feet, and, later, of the whole body, with slight opisthotonos and stiffness of the neck. No fever. Mental development at a stand-still; permanent flexure of the upper extremities. In the forty-fifth week, the attacks were seldomer, in the forty-seventh they ceased, and then the intelligence seemed again to waken. At the end of five years, he was about as far advanced as an ordinary child of three years. D. states that early in the boy's life the parents had given him a good deal of opium (Venetian Theriak).

3. A strong boy, of healthy parentage, developed normally to the fifth month. His father then discovered that he could not distinguish sweet, bitter, salt, or sour by the taste, and that the strongest and most offensive odors had no effect on him. His sight, hearing, touch, and his physical development were normal. At the end of two years, taste and smell were still entirely wanting. The child had a wonderful appetite, and would devour large quantities of the most offensive things. In the thirtieth month he began a severe scarlatina, which lasted two months. After this, the speech was very slow, monotonous, and finally completely aphasic. Hearing was very acute. The aphasia lasted three weeks, and it was several months before the child spoke as well as before the fever. It was then found that taste and smell were normal, and the ravenous appetite had disappeared.

4. Case of club-foot—from the fifth to seventh month occasional right-sided convulsions, with loss of consciousness, opisthotonos, etc. After this, the intelligence of the child developed very slowly, but at the age of seven years, he was about as far advanced as a child a year or two younger.

J. F., JR.

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AND  
DISEASES OF WOMEN AND CHILDREN.

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## ORIGINAL COMMUNICATIONS.

A REVIEW OF THE OPERATION OF GASTROTOMY FOR MYO-  
FIBROMATA OF THE UTERUS.

WITH COMPLETE STATISTICAL TABLES.

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BY

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Washington, D. C.

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ABDOMINAL surgery has become a favorite study through the brilliant impetus given it by the labors of those especially concerned in the diagnosis and treatment of diseases of the female pelvic organs. The literature is extensive, but widely scattered. Opinions of eminent surgeons, extremely divergent, appear as journal contributions in the different civilizations of the world. Statistics of operations crop out sporadically, covering only a few cases, or when, with a larger ambition, they traverse a wider field of general reading and differentiation, they are marred with actual error, with incompleteness, or with uncertainty. Such insufficiency, errors of omission and commission, is an effectual barrier to logical deduction. Unless the collective results of *all* operations, so far as it is possible to obtain them, be known and tabulated, we have no *constants* upon which to build. Any prediction of the future of gastrotomy is worthless, unless founded upon an intelligent analysis of correct



statistics. So far as I am aware, despite the patient labors of Pozzi, of Péan, of Koeberlé, and of Catternault, a thorough statistical table, sufficient, and free from error, does not appear in the literature of any country. The work of these statisticians in the special field of abdominal surgery is beyond all praise—the value of it may not be measured by encomium. But they do not go over a large enough territory, and even the ground covered is not free from grave errors. The difficulty of arranging, assorting, and analyzing a vast amount of statistical literature, that extends through the various languages of the two hemispheres, can be fully appreciated by those only who have undertaken it. It is impossible to prevent some errors of greater or less degree from creeping in. I do not pretend to infallibility in the arrangement of my own tables. I sincerely trust that I may not be accused of presumption in criticising the work of my predecessors, and that no one will infer from such criticism that I deem my own work beyond the pale of legitimate scrutiny. I am anxious to give the profession in compact form the history of gastrotomy, its past results, its future prospects, drawn from statistical evidence which it has been my endeavor to make as complete as possible, together with such intercurrent remarks upon ways and means as may be drawn out by the necessities of the subject. There may be nothing original in this—as much of it is to be found in German, French, English, Spanish, Italian, American, and Danish journals; whatever of originality may be claimed rests in the fact of the primary concept, the desire to bring all of these scattered lighthouses in a troubled sea of journalism into one compass, so that the reflected light of those made eminent by brilliant success may shine upon all equally, without going over the world's literature to find it. Also it seemed advisable to bring into one article the methods practised by different operators, both in regard to the first steps of the operation, as well as in the treatment of the pedicle, and from such consideration to draw conclusions as to the plans which have given the greatest success. It will be of equal interest to watch the advance of the operation, how it has grown into very general favor, and how the death-rate diminishes with larger intelligence and riper experience. All writing of this nature improves from honest criticism. My own, with the improvements which

shall be added to it by the comments of my readers, will furnish better material for building by some future writer.

*History.*—Schröder's term "myomotomy" seems to apply properly to those cases in which simple extirpation of the tumor is attempted. The "hysterotomy" of Péan is an operation of far greater magnitude, and is limited to amputatio uteri supravaginalis for uterine fibroma. It is well to bear this distinction of terminology in mind. In the early days of gastrotomy the mistake was a common one of diagnosing an ovarian tumor for a fibrous tumor of the uterus; in doubtful cases exploratory incisions were made. Such were the operations of Lizars in 1825 and of Dieffenbach in 1826. Granville in 1837 operated for the removal of a pediculated uterine fibroma with an unfavorable result. In 1844 Atlee and Lane extirpated subserous polypi. Clay and Heath in 1843 made the first partial amputation of the uterus with fatal results. Then came other cases in the order tabulated. Kimball and Koeberlé seem to be the only ones whose operations were based upon a correct diagnosis. To Péan belongs the merit of establishing the operation upon scientific grounds, based upon exact indications, and his results have been brilliant. In Germany Hegar was the first to operate successfully, then came Billroth, Kalltenbach, and Schröder. Kleeberg inaugurated a new era when he proposed surrounding the pedicle with elastic ligatures, and this has been most successfully carried out by Hegar, whose results are beyond all praise. In twelve of his cases there was only one death, and this was not due to sepsis, but to a paralysis of the heart attributable to a long-standing anemia. The intraperitoneal method as practised in ovariectomy led up to the elastic ligature. It was thought that gastrotomies might be conducted, in relation to the pedicles, as ovariectomies were. While the intraperitoneal plan, except in the hands of Schröder (who had 10 deaths in his first 25 cases, and 5 deaths in his second 25), has not been attended with encouraging success, even with the most improved devices, the extraperitoneal with the elastic ligature has a brilliant future before it.

*Dangers of the operation.*—The dangers which may result from gastrotomy are those due, 1st, to hemorrhage; 2d, to shock; 3d, to peritonitis. In treating of the indication for the operation, sufficient allusion will be made to those positions of

the tumor, as well as to complications, which may render operative interference unwise.

1. *Hemorrhage*.--This may be *primary* or *secondary*. Cases of excessive bleeding, causing death, during the operation, are not rare, most of them occurring in extrauterine tumors. The surface of these growths is ramified by a number of large vessels, which may continue to bleed even after the contraction of the uterus. It is well known that instances of high vascularity in myomata have been met with, so that wounding the tumor by a careless handling of the knife, during the first steps of the operation, has been followed by fatal hemorrhage. Sometimes one large vessel giving off numerous branches surrounds the outer aspect of the myoma, while interiorly its vascularity is maintained by a number of small vessels. This primary hemorrhage, momentarily controlled by contraction of the uterus, may pass into the secondary form by a relaxation of the uterine fibres. There is always danger in wounding a myoma through its uterine envelope. The chances of secondary hemorrhage grow less with each year that is added to the history of gastrotomy, but I cannot agree with Péan that we have as yet arrived at that period in which "the danger is almost completely annihilated, thanks to the perfection of our instruments for ligating the pedicle and for keeping it in the inferior angle of the wound." He affirms that the operators whose patients succumbed to this accident divided the pedicle by means of a bistoury, without even using the *écraseur*. The best results from the extra-peritoneal treatment, in its relation to bleeding, have been obtained from the use of the cautery, from the elastic ligatures, and from a clamp properly adjusted. While it is not pretended that this clumsy contrivance meets the demand of elegant surgery, or that the extraperitoneal plan is the one of the future, yet the brilliancy of the operation may be foreshadowed from the recent advances made in securing the pedicle, so that secondary hemorrhage from a slipping ligature, or from a rotting mass left in situ, is a rare occurrence—so rare, indeed, that the percentage of deaths therefrom during the last five years, as compared with a similar percentage during the previous history dating from Clay's case, has been diminished 95 per cent. This result has been obtained from the improvements originated by different



surgeons in the field of abdominal surgery, with direct reference to securing the pedicle in the extraperitoneal treatment, and to the proper constriction of the vessels by stitching in the intraperitoneal plan. Koeberlé's and Cintrat's serrenœuds, the different clamps which maintain an even and exact pressure upon the stump, together with the pressure forceps and the cautery, have given the operator a boldness and freedom from anxiety which he could not have prior to the introduction of these inventions. If Koeberlé's wire be used, it should be sufficiently large to prevent its cutting through the pedicle or breaking, accidents which happened to Lawson Tait, and which led him to devise a clamp of his own. Ligatures, when used in the place of the clamp, have fortunately fallen into disrepute. No matter how tightly tied, or how thoroughly the pedicle was sewn through, they were liable to slip through shrinkage of the stump. The number of deaths reported from hemorrhage will be found under the division "*Results.*"

2. *Shock.*—The contemplation of an approaching operation of serious nature, together with the morbid introspection of her condition extending over a period of years, will create within a woman a profound impression of the nervous centres. The effect will be conveyed directly to the heart, making its action weak and irregular, so that an insufficient amount of blood will be sent to the brain. It will influence respiration, so that there will be deficient oxygenation. Despondency, melancholia, palpitation of the heart, and hurried breathing may all develop before the operation in a highly sensitive patient. When to this is added the immediate impression of the operation itself, it is not difficult to understand why some women should die after a gastrotomy without any other known cause than that of intense nervous shock. Péan believes that the *duration* of the operation has much to do with it. Storer believes it due to a profound impression upon the cerebro-spinal centres, causing paralysis of the heart. The truth is that the duration of the operation is only one of the many factors at work, and the paralysis of the heart is but the resultant of several forces. So far as I can judge, after a review of several hundreds of cases, the accident of shock obtained only in those instances of well-marked centric nervous disturbance. The heart's action had probably been growing weaker

for months, owing to the reflex action of the disturbed centres. These had at first become weakened by the constant calls made upon them by the will to furnish fresh force with which to fight the despondency that daily assailed the patient. To keep up this excessive demand, the heart was called upon for larger supply of blood. As the days went by, the mental impression of melancholia was felt along the whole cerebro-spinal track, and, necessarily, the heart felt its influence. While there can be no doubt that a long operation is pernicious, still it is not of itself sufficient to cause death, except in such instances as I have cited. Even the danger of shock may be combated by attention to the general health of the patient before operation, especially in regulating the secretions, and by adjusting the length of the operation as may seem advisable. This preliminary treatment is of the greatest possible moment, and should never be lost sight of. Reduction of temperature is a prominent factor of shock, and by some writers is regarded as the chief cause.

3. *Peritonitis*.—This complication is usually due to an escape of blood or serum into the peritoneal cavity. If the “*toilette du péritoine*” be carried out with strict observance of detail, in the words of Péan, “*il est facile de se mettre à l’abri de cet accident.*” Dr. McDowell, during the earliest days of ovariectomy, commenting upon his second case, says: “Notwithstanding my great care, a quart or more of blood escaped into the abdomen; and, after the hemorrhage ceased, I removed, as cleanly as possible, the blood, in which the bowels were completely enveloped.” For the good results obtained from extreme care, we are largely indebted to Dr. Keith. Lawson Tait cleans out the cavity of the pelvis and the hollow of each loin (after an ovariectomy) by two or three sponges, and then fills the whole abdomen full of tepid water, closing the wound as well as possible with one hand, while the other is inside moving among the intestines, giving them a “good wash.” The operation is repeated until the water comes out clear. Dry sponges are then pushed into the cavity and over each kidney, and the sutures inserted into the wound. The sponges are then removed. Keith places great reliance upon the use of drainage tubes, originally introduced by Koeberlé in 1867, and since that modified by himself, and of this I shall have

something to say later. Neither Listerism nor drainage will be necessary if the cavity be properly cleansed. Listerism may be objected to: 1st. That it does not always prevent putrefaction within the cavity. 2d. That the absorbent power of the peritoneum is so great—greater, indeed, than many suppose—that there is danger of carbolic acid poisoning if the spray be directed upon the incised surface. It has been objected to drainage, that the presence of a foreign body within the wound may act as an irritant, and that a ventral hernia may result from its use. The utmost care should also be taken with the sutures, the wound should be accurately closed, and the suture holes should be watched to arrest bleeding. All of the structures of the abdominal wall should be included in the suture so as to secure the closest coaptation, although many cases have gone on to perfect recovery in which the peritoneum was necessarily left out. The agglutination of the peritoneal folds by effused lymph causing pouches renders drainage of doubtful efficacy. It was devised for the especial purpose of cleanliness, and yet it fails to cleanse these lymph-made pouches, and in this way may itself be a cause of septic peritonitis. In whichever way our opinions or practice may lead us in regard to the strict observance of antiseptic detail, as originally proposed by Lister, there can be no question of the value of perfect cleanliness and of a modified antiseptis. A discussion of this question is not germane to the subject, but it is a self-evident truth that an uncleanly operator, either as regards himself or his operation, will never succeed. It does not matter much what special antiseptic is made use of, if it be a germicide. Hot water has answered very well. Perfect cleanliness is a preventive of decomposition, and its value can never be over-estimated. I myself believe that, with a temperature in the operating room of 80°, with plenty of hot water for instruments, sutures, and appliances, with hands cleansed with ordinary brown soap, with a skilled operator, and with a *perfect* observance of detail in cleansing the cavity, a good result will follow as certainly as if Listerism in any of its forms had been practised.

*Indications for gastrotomy.*—Savage says: "The tumor is killing by reason of its volume, and for that reason alone the surgeon is called upon to remove it by gas-



trotomy. The balance of success is decidedly against the removal of abdominal tumors causing little or no inconvenience." In a restricted sense, this is true. The mere size of the tumor has nothing to do with the question, and no surgeon would resort to a dangerous operation for inconveniences only. Tumors do not endanger life by their size alone. Many patients have lived their length of days with large uterine growths, suffering no other discomfort than that which would naturally arise from weight. Others have been brought to a very low condition of physical health from tumors of very much smaller volume. Neither can we assert with safety that the balance of success is against the operation. The history of gastrotomy is not different from the histories of other capital operations which have long since come out from the gloom of intense conservatism into the light of general recognition. What Péan, Schroeder, Hegar, Tait, Thornton, Kimball, and others have done, others will do, as experience becomes more general. The same success which they attain will be reached by others who profit by their researches, and learn caution from the early errors made by them. The conclusions to which Péan has come—and none can speak with greater authority—I will give in his own words: 1. Fibrous or fibrocystic tumors of the womb having reached a certain stage of development may be followed by grave accidents, which may end fatally in the death of the patient, sooner or later. In such a case, gastrotomy is not only the right of the surgeon, but his duty. 2. If the connections of the tumor with the womb are even slight, it is better to amputate the body of the uterus, without endeavoring to conserve the ovaries, than to try enucleation of the tumor, without molesting the sexual organs.

Apart from any consideration of the tumor itself, or of the condition of the patient, we must number among the favorable indications for gastrotomy the better results which are being reached each year in the diminished risk of hemorrhage, shock, and peritonitis. A tumor endangers life by pressure upon surrounding organs, by hemorrhage, or by centric nervous disturbances; but, as an operation is not devised solely for the purpose of saving life, but equally for the preservation of health and for the amelioration of suffering, the possible results of the

surgical procedure must be carefully weighed. I do not believe, and statistics do not show, that hemorrhages from myo-fibromata are usually fatal. Bleeding is sometimes absent altogether, and when present, varies greatly. So I cannot agree with Lawson Tait, who disputes this point; neither do I agree with him in supposing that a uterine myoma is necessarily a fatal disease, or that gastrotomy and gastro-hysterectomy were devised for the treatment of all such tumors, without an intellectual consideration of all the points in the case. The operation is devised to rid the economy of such growths as endanger life in some of the ways pointed out, to give surcease from suffering, and to preserve health. But it is not a murderous invention of scientific experimentalists. Neither is he correct in other statements (*Med. Times and Gazette*, Nov. 5th, 26th, 1881). The brilliant success of Péan, as brilliant as that of Tait himself in "the removal of the uterine appendages," does not carry with it any such condemnation as he gives it. Tait is enthusiastic over his operation for the arrest of hemorrhage from myoma, because his results have been excellent; had his gastrotomies been equally satisfactory, he would not have been so sweeping in his remarks. The same reasoning which he applies to hysterectomy applies with as much force to his own operation in the hands of other surgeons. In many cases it has been as dangerous and difficult as hysterectomy, and the permanent results have been doubtful. The question of a resulting sterility can have nothing to do with the matter. The child-bearing function ceases at the menopause, and even if pregnancy be possible coincidently with the existence of a uterine fibroid, it is certainly not desirable. The absence of the uterus is not incompatible with health. If we make out an extrauterine tumor, moving freely, we may be sure that it has a long pedicle, and the necessary operation of gastrotomy will not be very severe. The chief danger, and one that will always obtain in abdominal surgery, is the wounding of the peritoneum; but even this danger can be mitigated by proper precaution. The first indication is obviously to save life when endangered; the second, to make it bearable when suffering has made it unbearable. As to tumors themselves, I find that, out of 296 cases, gastrotomy for the removal of the tumor was done 92 times. Gastro-hysterectomy, with or without the removal of the ap-

pendages, was done 204 times. In the first series were tumors with distinct pedicles, with few or no adhesions, and were interstitial or sub-peritoneal. Out of 411 cases, the operation was completed in 344 instances, and not completed in 67. The non-completed cases were largely in the early days of abdominal surgery, and when occurring within the last five years, it was owing to unlooked for complications. The 204 cases of gastro-hysterectomy were for tumors with extensive adhesions, tumors intimately blended with the uterus, multiple tumors, and tumors à geodes (pseudo-cystic). The tumors for which gastrotomy is necessary are the sub-peritoneal (*periuterine* of Koeberlé) and the interstitial. A patient complains of a mobile tumor, hard, separable from the uterus, which may retain its normal characteristics, or may be hypertrophied, as is usually the case. She has well-marked marasmus from digestive disturbances, from rectal and vesical tenesmus. Obstinate hemorrhage may be of constant occurrence, or menstrual irregularities (most common) may be prominent. Anomalous symptoms involving every viscus may be complained of. Her symptoms are grave; they are leading on to death. Apart from these characteristic features, ascites may develop. This is most liable to happen in sub-peritoneal tumors, and is not regulated by the size of the growth. The whole peritoneal space may be filled, and suffocation be imminent. The question arises: What shall govern the surgeon in the treatment of such a case? If the volume of the growth seriously impede respiration, or if grave ascites develop in sub-peritoneal tumors, gastrotomy should be the rule. Péan says that all other sub-peritoneal myo-fibroma which do not present either of these features are beyond the pale of abdominal surgery. If the pedicle be large, or if there be present other small interstitial fibroids, gastro-hysterectomy may be indicated. It is in those cases where the tumor is high up in the false pelvis, and where the uterus and ovaries are also well out of the true pelvis, that gastrotomy and gastro-hysterectomy have met with the best results. A consideration of the anatomy of the broad ligaments, the position of the bladder, ureters, and spermatic artery teach us the gravity of an operation *en masse*, unless the uterus and ovaries be high up. The superimposed coils of the small intestine sometimes embarrass the operation, and if the fundus be low



down, it is reached with difficulty, and it may become necessary to precede the operation with the use of the colpeurynter, so as to float the mass up. The indications for gastrotomy or gastro-hysterectomy, when summed up, seem to be:

1. Extrauterine tumors, with attenuated pedicles.
2. Interstitial tumors.
3. Tumors sessile, intimately attached to the uterus and having extensive adhesions.
4. Interstitial fibroids complicating sub-peritoneal growths.
5. Ascites complicating fibroids.
6. So-called fibro-cystic growths.
7. When life is threatened from any cause connected with the existence of the growth.

Intense anemia and recent thrombosis of the veins of the pelvis and thigh are contra-indications.

*Methods of Operating of Different Operators. Treatment of Pedicle.*

*Péan's Method* (extraperitoneal).—If necessary he reduces the size of the tumor "morcellement," it is then drawn out of the abdomen and held by an assistant. A sound is then introduced into the bladder to ascertain its relations, and the cervix

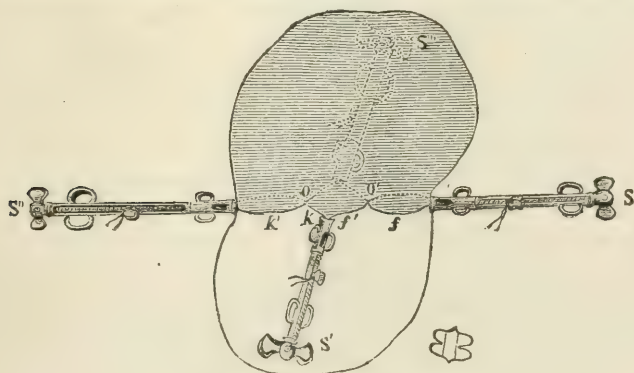


FIG. 1.—From Péan and Urdy.

Tumor in which the volume is to be reduced "morcellement." S, S', S'', S''', are serre-nœuds used to form three ligatures.

is transfixed with two strong wire ligatures at right angles. Below this a curved needle is passed through the cervix bringing back a double wire. This is divided, and each half is fitted into Cintrat's *serre-nœud*, then twisted. The tumor and uterus are amputated above the wires. The pedicle is left in

the lower angle of the wound—the wires and serre-nœuds being left in position. (Figs. 1 and 2.)

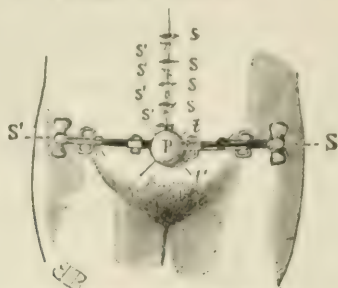


FIG. 2.—From Péan and Urdy.

Position of sutures and ligatures, the latter being fixed by means of the serre-nœuds, S, S', t, t', are metallic sutures. P, the neck of the uterus forming a pedicle. SSSS, superficial sutures. S'S'S'S', deep sutures.

*Hegar's Method by Elastic Ligatures* (extraperitoneal).—Temporary sutures are placed along the margin of the abdominal incision to keep the peritoneum in relation to the skin. Adhesions, if vascular, are ligatured in two places and then cut through between them. An assistant raises, with a dry towel, the tumor, while the edges of the abdominal wall are pressed together behind the tumor as it is withdrawn. The elastic ligature is placed around the cervix below the point of amputation. This consists of a durable India-rubber ligature five millimetres thick. At full stretch it is brought around the uterus and knotted. If this be insufficient, it may be ligatured in two portions. A double ligature carried by a peculiar needle is passed through the stump, which is then divided and tied around each half. The growth and uterus are then amputated above. Now around the neck of the stump and below the elastic ligatures, the peritoneum is carefully adapted, and the silk suture, which brings only the edges of the peritoneum together in the bottom of the wound just below the pedicle, is looped into the side of the latter underneath the ligature—next the margins of the peritoneum above the pedicle are united in a similar way; the next two sutures of the wound bring together only the peritoneum, while those farther up bring together all the coats of the abdominal wall. Thus there is produced a space which surrounds the pedicle and is floored by peritoneum, this is treated aseptically. The projecting end of the stump is thoroughly cauterized; the raw surfaces round it are painted with a solution (three to ten per cent) of chloride

of zinc, and cotton wadding, which has been soaked in a two per-cent solution of chloride, and then thoroughly dried, is packed around the stump. Finally the end of the stump alone is touched with one-hundred-per-cent solution. The whole is covered with protective silk and carbolized wool, and the anti-septic dressing laid on so that it can be easily lifted (Hart and Barbour). The elastic ligature is cut away about the tenth

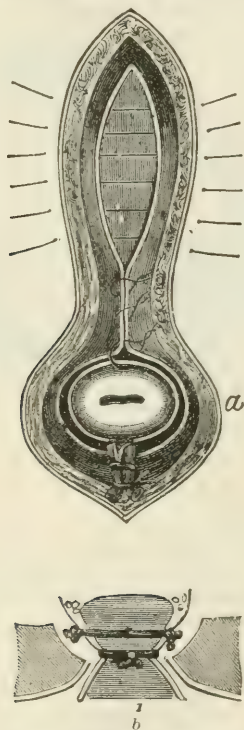


FIG. 3.

Treatment of fibroid tumors by elastic ligature (Hegar and Kaltenbach). *a*, Abdominal incision with the stump in its lower angle; only the peritoneum is brought together with the lower sutures, while the upper sutures take in the whole abdominal wall. *b* same in section, to show the trough floored by the peritoneum round the stump, and the position of the elastic ligatures.

day, the space around the stump having been kept thoroughly dry, and the pedicle trimmed gradually with scissors to diminish its size, and to allow free action of the chloride of zinc. Preference is given to a long abdominal incision; when we come to a critical inquiry of the extra- and intra-peritoneal methods, this method will be discussed more fully. Lossen's modification will then be alluded to, as well as the remarks



upon the two plans made by Hegar and Kalténbach. The results from this operation have been remarkably successful. (Fig. 3.)

*Schroeder's Method* (intraperitoneal).—Vascular adhesions are ligated at two points and divided between them. The ovarian arteries are ligated on each side. The cervix is pierced by a double silk ligature from behind, coming out at the bottom of the vesico-uterine pouch in front—this being

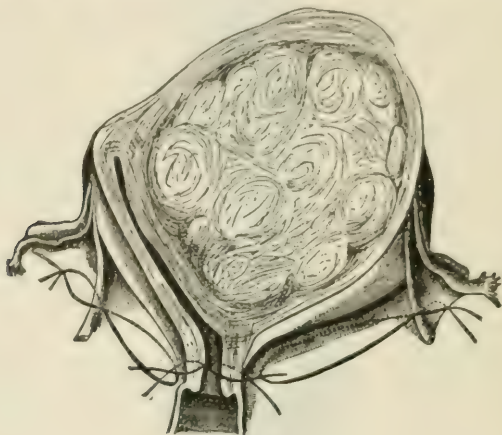


FIG. 4.

Position of ligatures in amputation of uterus at level of os internum. The cervix is ligatured in two portions, so that a ligature controls each uterine artery. Each broad ligament is ligatured in two portions which meet at the round ligament. The outer ligature controls the ovarian artery.—(Schroeder.)

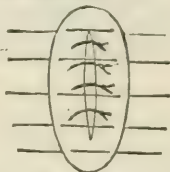


FIG. 5.

Ligaturing of the intraperitoneal stump of the cervix. The deep ligatures which bring the muscular tissue together are represented as tied. The superficial ones bring only the peritoneal flaps together.

divided, the end of each half is carried backward through the broad ligament of its respective side, external to the cervix and knotted to its corresponding end. The mass is then cut away above the ligatures, in such a manner as to leave a strip of peritoneum like a frill around the muscular surface of the stump.

Then the surfaces of the stump are brought together; first the mucous membrane is united by sutures which are cut short, then the surfaces of muscular tissue are firmly secured in contact, by sutures not involving the peritoneum, and finally the projecting ring of peritoneum, which has been left for the purpose, is brought together over the stump, an elastic ligature is put around the cervix before cutting away the uterus, and removed when the stump is sutured. (Figs. 4 and 5.)

*Kleberg's* (Russian) *Method*.—He passes a trocar through the neck of uterus from before backward; replacing stilet by elastic ligature; canula removed and ligatures tied, including uterus, ovaries, tubes and ligaments; ligatures brought outside. If tumor is pediculated, he transfixes and removes only the tumor.

*Dr. G. Leopold* (*Archiv f. Gynäk.*, xx., 1), writing in reference to supravaginal amputation of the fibromatous uterus, gives four stages: 1, Turning out of the tumor and application of the temporary elastic ligature; 2, Ligation of the broad ligaments, circumcision and dissection of the peritoneum; 3, Ablation of the tumor and trimming of the amputated surface; 4, Turning inward of the projecting peritoneum, suture of the two flaps; deep bilateral circumligation of the stump so as to secure the uterine artery; removal of the elastic ligature; cleansing of the abdominal cavity; dropping of the pedicle, and closure of the abdominal wound.

*Thomas' Operation*.—The abdominal walls are incised as for ovariectomy, and all cystic formation emptied by the trocar and canula. The lowest portion of the tumor is then manipulated so that a strong cord is passed under it. By this the pelvic extremity of the tumor is raised so that one limb of the clamp may be passed underneath it. The second limb of the clamp is then secured to the first, the tumor cut through, the severed end of it drawn down by vulsella, and, the entrance of blood to the peritoneal cavity being prevented by stuffing napkins under and around the bleeding surface, the mass is diminished in size by the knife and removed as rapidly as possible. The pedicle is then examined, and if it be found practicable, a second clamp is placed lower down, the first removed, and additional tissue cut away above the lower one. Should this manœuvre be found to be impossible from the great bulk of

the lower segment of the tumor, the incision is prolonged to such an extent that the tumor can be delivered with a certain degree of force. Two assistants then lift it as high in the air as possible, and the attachment of the bladder to the tumor being examined by a catheter, the former is detached from the latter if this be found necessary, as near to the vaginal junction as it can be placed, the large clamp is then applied, and screwed so firmly as to control hemorrhage. The tumor and as much of the uterus as is above the clamp is then cut off. Three or four steel knitting needles are now passed through the tissue just above clamp, at right angles, so as to support the part after the clamp is loosened. Then by large cautery irons the tissue above the clamp is thoroughly charred. The clamp is then loosened and the ordinary dressings applied.

*Spencer Wells* (Reprint from *British Medical Journal*, June 11th, 1881) says: "Whatever doubts some may entertain as to the value of my experiments on animals and practice on women, in leading most operators of the present day to bring divided edges of peritoneum together whenever they have been separated by wound or by operation, I myself have no doubt whatever about it; and just as strongly as I assert that it is and must be better when the abdominal wall is divided to bring the peritoneal edges and surfaces of the opening together, restoring the complete closure of the peritoneal cavity, than to leave the cavity free to the admission of fluids oozing from wounded muscles, fat, and cellular tissue, and to allow contact of intestines and omentum with anything more than peritoneum; so strongly—more strongly if I could—would I insist that the peritoneal edges of the divided uterine wall, or of the connecting part of the outgrowth with the uterine wall, should also be carefully brought together . . . by many sutures, or by uninterrupted suture along the whole extent of the gap." . . . "I feel very hopeful that, by the use of the improved pressure forceps, the arrest of hemorrhage will be effected much more easily and completely than before; that suture of the uterine wall will obviate more than one source of danger; and that, by careful attention to all needful antiseptic precautions, the removal of uterine tumors may now be undertaken with a far more confident expectation of a successful result than could have been reasonably entertained a



few years ago." In his address before the International Medical Congress upon the "Recent Advances in the Surgical Treatment of Intraperitoneal Tumors," Mr. Wells insists upon three points—1st, the union of divided edges or separated surfaces of peritoneum; 2d, the use of pressure forceps in preventing or stopping or diminishing the loss of blood during and after operations; 3d, the practice of drainage in relation to antiseptics.

*Lawson Tait* (Reprint *Medical Times and Gazette*, November 5th, 26th, 1881), says: "It thus seems that it is quite impossible to avoid an occasional ablation of the uterus, and this proceeding is always very risky. The chief trouble is hemorrhage, for the uterine tissue seems little inclined to yield security with ligatures. Those cases which have been successful have had both the ligature and the cautery applied to the stumps—a proceeding which I advocated for the first time a few months ago. But so had one of my fatal cases, where the absence of drainage seemed to me to account for the failure. Therefore I shall always in future add the precaution of a drainage-tube where I am at all in doubt as to the security of the pedicle. Where we can use the clamp, we shall get a security on this point which the ligature cannot give, but then we shall have all the risks of the extraperitoneal treatment, and I doubt if this would be any improvement." Mr. Tait further says (*personal com.*, May 30th, 1882): "So far removal of myomata by laparotomy has not been a successful operation. I think I have done about thirty cases with about ten deaths; this is over rather than under the mark. The best results have been with the clamp, the worst with the ligature. Where they are small, I remove the appendages and they do beautifully. . . . When they are big, I remove them, and when there is a decent pedicle, they do very well; when they have not, they die from hemorrhage."

*Dr. Heywood Smith* (*personal com.*) says that his results in hysterectomy, leaving the cervix as a stump, have not hitherto been very successful, as his cases have been unfavorable ones. The results, he thinks, in England are being obtained where the stump is brought out and kept in the wound by a clamp or *serre-nœud*. When pain, hemorrhage, and rapid growth coexist,

Dr. Smith believes that the removal of the tumors is not only justifiable, but clearly indicated.

*Dr. George Granville Bantock* (*personal com.*, June 2d, 1882) says that his experience is in favor of the extraperitoneal treatment of the pedicle in all cases of supravaginal hysterectomy, and in the case of very thick and vascular pedicle not necessarily involving the uterine cavity or body. He had done, up to date of communication, seventeen cases (fibroid and fibro-cystic) with five deaths, the last dying of chronic Bright's disease.

*Dr. H. O. Marcy* makes use of the following modification of Schroeder's operation: "The inclosed tumor is encircled at its base by a sheet of rubber, in the centre of which is an opening reinforced by a rubber ring of considerable thickness and of various sizes. Around this is tied a rubber cord sufficiently tight to control hemorrhage. The great bulk of the tumor is then cut away. Just above the constricting rubber the pedicle is sewed through and through by the use of a long needle set in handle, without cutting point, with an eye near its distal end. Threaded with an antiseptically-prepared tendinous ligature, commence near one side, and thrusting the needle through, detach the ligature and rethread the other end, then withdraw the needle, thus making the so-called shoemaker's stitch, carrying the ends of the thread from opposite directions through the same hole made by a smooth-pointed instrument. This process is repeated, inclosing purposely only a comparatively small portion of the tissue, and uniform pressure is carefully continued until the entire stump is sewed through. Then one knot completes the fixation, reducing to the minimum the greatest danger from the animal ligature. The amputation of the tumor is completed by a double flap, and the parietal edges are carefully approximated by a continuous animal suture." *Dr. Marcy* claims for his modification: 1st, the necessity of the *toilet* of the peritoneum is avoided; 2d, the avoidance of primary and secondary hemorrhage; 3d, equalized pressure is secured by the continuous ligature.

*Prof. Billroth*, in two cases operated upon by him in December, 1882, made use of Paquelin's cautery, drainage tubes, and iodoform dressings. Cavities may be filled with iodoform

gauze, and the dressings left undisturbed for eight or ten days without any unpleasant odor.

*A critical Inquiry into the Extra- and Intra-peritoneal Treatment of the Pedicle.*—Measured by results up to the present time, the extraperitoneal treatment of the pedicle has the advantage. Where the stump is small, consisting only of the pedicle, it may be ligatured and dropped into the peritoneal cavity with comparative safety. But where the stump is large, embracing the remainder of an ablated uterus, simple ligatures *en masse* are not sufficient to prevent hemorrhage, or to overcome the elastic resistance of the uterine texture. The uterine pedicle may be imperfect on its vaginal side along the tunica mucosa, or it will be found impossible to express all juices from the stump before returning it; and since, in the intraperitoneal plan, it is very difficult to render the pedicle aseptic, or to arrest bleeding *absolutely*, peritonitis may result from decomposing fluids. Lossen has suggested (see Hegar and Kaltenbach, *Oper. Gynäk.*) that the serre-nœud or écraseur should be used to arrest temporary hemorrhage; four strong threads of carbolized silk, three centimetres above the loop, are to be drawn through the stump closely, two in sagittal, two in frontal directions; between each two threads is a space of one-half centimetre, the same between each two pairs. Those threads belonging together are tied around half the stump, in such a manner that the loops are crosswise and knotted, or intervening double loops, so-called sailor's knots, may be used and tied firmly. While it may be true that the elastic ligature would be sufficient to control hemorrhage, the size and condition of the pedicle would still be objectionable features. Czerny's case, which resulted unfavorably, does not seem to encourage this plan. If the tumor be large, so that its base is concealed, or if there be strong vascular development within the ligaments, the application of forceps over the tense veins, or stitching around the stump, will be found impracticable. Even a slight rupture of a blood-vessel may flood the entire field of operation, developing subserous hematoma. Schroeder himself, in one case, had to abandon the operation from this cause. Having abstained from long quotations in previous pages of this article, I may be allowed a translation from Hegar and Kaltenbach, which I shall give literally. Under this same caption, they say: "We



have, moreover, to consider that not only serious hemorrhage, but also the oozing of minute quantities of blood have to be avoided, because the latter will interfere with the prime intention of suture junction, and lead to sepsis. None of the intraperitoneal methods present absolute safety from hemorrhage, from stitch wounds or small lacunæ in the line of juncture, and something is thus left to accident in the act of sinking the stump. However much we appreciate the modern improvements of intraperitoneal methods, we must, for the present at least, from our experience, give preference to the extraperitoneal disposition of the stump, according to Hegar's method. The elastic ligatures protect us from hemorrhage, and the treatment by chloride of zinc, of decomposition of the portion ligated. The two chief dangers of hysterectomy are thus avoided. There remain, however, disadvantages in the intraperitoneal disposition of the stump, viz., the necessity of tedious and long post-treatment, and the possible provocation of abdominal herniæ. In a very short neck and tightly-drawn ligaments, the extraperitoneal fastening of the stump may present great difficulties, or render it even impossible. Excess of adipose also presents difficulties. We mostly meet with these unfavorable complications in small fibroma and in malignant tumors at the fundus of the uterus; whilst large tumors generally stretch the ligaments, rendering the abdominal parietes thinner. The chief obstacle in the drawing-out of a normally fastened uterus presents, according to Hegar's experiments in cadavers, the sacro-uterine ligament, the abdominal coverings of the posterior part of the pelvis, and the fascia pelvis. In order to render these integuments more pliable, Hegar made use of a kind of preparatory treatment which consisted in the application of a colpeurynter and pessary, in manual pressure upwards, or by carefully drawing down the portio vaginalis. Whether, eventually, section of the utero-sacral ligament, before or during the operation, is possible or advisable, Hegar dares not to decide, from his experiments. By making use of these auxiliary methods, and especially of the new method of peritoneal stitching around the stump, we have, it is true, always succeeded in overcoming the obstacles mentioned, as opposed to the extraperitoneal disposition of the stump; nevertheless, just such cases in which a less vascular development is present might offer a better field for

the intraperitoneal method." Dr. Schroeder believes that, as in ovariectomy the extraperitoneal method will have to give way to the intraperitoneal, so, too, in myo-fibromata, gastrotomy will not be perfected until some plan is devised by which the stump may be left with safety in the abdomen. Of the extraperitoneal method, Hegar's plan of elastic ligature, and the treatment with cautery and clamp, or *serre-nœud*, have met with the greatest favor and success. Hegar has been signally fortunate with his ligature, as has been Péan with the *serre-nœud* in the lower angle of the wound. The clamp is open to the objection that it leaves an unclosed abdominal cavity into which may fall septic material. The stump must also heal very slowly. Since popularity and success are concomitants of each other, it is probable that the extraperitoneal method will obtain preference, for a long time to come. It covers a larger range of operations, and its success, compared with the total of cases, is greater than the intraperitoneal. Either the method of Hegar or that of Péan (more fully described in his monograph "*Hystérotomie*") will be the plans preferred by surgeons. But this does not preclude the possibility of improvement. The clumsy clamp or *serre-nœud* are contrary to all preconceived ideas of neatness, and are not the logical outgrowths of scientific teaching. They are the mere scaffolding of the future of abdominal surgery. Should science stride forward with the same speed and intelligence as has marked its career in the past, the next decade will do away with this cumbersome scaffolding, important now though it may be. These make-shifts are the proximate way to success. Necessity will fashion into fact that which is now ideal, though it may not be in an air line as the bird flies, but a devious, circuitous way, cut out of the very mistakes of men. The ideal operation, based upon our knowledge of the reparation of wounds, and the assimilation of tissues, will be an intraperitoneal one, in which there shall be no necrosed mass outside, no clumsy hemostatic contrivance, which necessitates an open abdominal space, but where the wound can be closed without apprehension of septic absorption from decomposition within the cavity. Just how this may be done I do not pretend to say; that it will be done in the future I cannot doubt. Marcy's modification of Schröder seems to be a step in the right direction, and yet

it is not free from the danger of septic infection. In a juicy, large, and vascular stump, the cobbler's stitching might fail to arrest exudation, even though stripping were first made use of; neither does it seem to follow that the dangers from the stump and peritoneal irritation are avoided. If a perfect non-irritating drainage could be devised, in conjunction with a plan of antiseptic irrigation, his method would be a great success. But even with Keith's improvement, drainage is insufficient, and is, of itself, not infrequently a septic carrier. Dr. Marcy advocates the use of double drainage tubes; but this does not rid us of the presence of an irritant within the lips of the wound, and even the double tube does not drain the cavity perfectly. If Hegar's method be generally adopted, and I cannot doubt that it will find a very large popularity, it will be a step toward the intraperitoneal operation, because it does away with a great deal of cumbersome surgical invention. Study, investigation, and experiment are drifting in this direction. It is evident that surgeons are casting about for some plan by which the intraperitoneal treatment of the pedicle may be adopted with safety. The intraperitoneal treatment of pedicles, with preservation of the uterus, is perfectly proper in some cases. Small pedicles may be perforated as in ovariectomy, double ligatures applied, and the cautery used above the ligatures. Schroeder removed the thin pedicles of polypi by means of scissors. The serous borders were sewn together above the wound. He had success with this plan, even when the tumors were broadly inserted, and there was considerable loss of substance of the uterine body. This method would safely apply to those pedicles only which are small, with a scant blood supply. Billroth, Spiegelberg, and Gayet have reported unfavorable results. The objections to Péan's extraperitoneal method are that the pressure around the pedicle is not equalized, and that an unprotected space is left. The wire, too, may cut through, and cause fatal hemorrhage. "Subserous tumors, with extensive and vascular adhesions, not perfectly isolated from the uterine tissue, can be extirpated only with a greater or less segment of the uterus." (Hegar and Kaltenbach.) In this case the extraperitoneal treatment will be much safer. The same authors also call attention to the principle that, in women in the prime of life, the ovaries must not be removed



if only a part of the uterus is to be extirpated, because a later conception may take place, and hematoceles result. If, after the intraperitoneal treatment, the cervical canal communicates freely with the abdominal cavity, by reason of a partially ablated uterus, an abdominal pregnancy might ensue. In 1874, Kaltenbach proposed to supplant the ligatures of the intraperitoneal operators by sutures which would bring into contact the anterior and posterior walls of the uterus, closing at the same time the entire wound (uterus and broad ligaments). Hegar had one successful case of this kind and two deaths, one from sepsis and one from hemorrhage. Spencer Wells' method of pressure forceps, ligature, and peritoneal suturing is open to many objections, and has not attained great success.

(To be continued.)

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## REMARKS ON THE MECHANICAL THERAPEUTICS OF AMENORRHEA.

BY

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AMENORRHEA is only a symptom of different morbid conditions, and any plan of treatment is unscientific which is not based on the cause, if it can be found. To say that such and such remedies are good emmenagogues always seems to me absurd. The question simply is : What is the cause of the amenorrhea? We first exclude pregnancy and the menopause, and then try to find if the trouble is in the blood, the nervous system, or due to diseases of the generative organs. If we find the cause to be an occlusion, an appropriate operation will be required; if chronic pelvic peritonitis, this must be properly treated; if chlorosis, iron and strychnine will probably cure the patient; if due to mental depression, we must "minister to a mind diseased;" if indolence or luxury are the cause, these should be remedied; often Bright's disease, phthisis, etc., will be the cause of amenorrhea, when treatment should be directed

to them. I have had much trouble to combat the popular notion that amenorrhea will bring on consumption. It is just the reverse: consumption will cause amenorrhea; it is a simple effort of nature to economize, to save, to husband the strength of the patient. If in phthisis we try, and really do establish, menstruation, we simply hurry the patient to the grave.

Every case should be carefully analyzed, if possible a correct diagnosis made, and treated accordingly. But in some cases we cannot find any cause, and our treatment must be empirical. We then use savin, tansy, pennyroyal, guaiacum, etc., and perhaps fail with all these so-called emmenagogues. What then? Although, in my opinion, amenorrhea does not cause any organic disease, it often causes functional disturbances of a very troublesome nature. It is very peculiar that some women do not menstruate for months and years, and still are perfectly well otherwise, while others will be troubled with headache, neuralgia, and other manifestations of nervous disturbances, which will cease on the re-establishment of the menstrual function. We must therefore bring about menstruation in the latter cases; and if all medicines fail, what then?

I have noticed, when treating cases of uterine disease, that after practising rapid dilatation, the next menstruation would be more profuse, and the thought came to me that by the systematic use of a rapid dilator I could bring on a normal flow in those cases where menstruation was very scant, and bring it on also in those cases where it was entirely absent. I commenced to experiment with different cases. Various mechanical means have been recommended and used hitherto, such as passing an ordinary probe or graduated steel sounds; these often fail, and are very painful. Sponge-tents have also been used, but the danger of these is now so well recognized that they are but seldom used. Electricity has also been employed, and is undoubtedly of great efficacy; but the complicated and expensive apparatus required will prevent its extensive application by the general practitioner. If we can accomplish the same result with a rapid steel dilator, the general practitioner can make use of this means and cure his patients, and not be obliged to send them, sometimes a great distance, to a specialist.

The instrument I use is Nott's uterine dilator. I prefer this

to others, on account of its small point which enables one to introduce it through even a small so-called pinhole os, and also on account of its strength. I introduce this, and slowly, very slowly, separate the blades (at the first sitting not to the full extent). I hold them thus for a few minutes, and then remove them. Perhaps I repeat this little operation once or twice at each sitting. I also gradually open the blades more and more, until I reach the full extent of separation. This operation can be repeated every three to six days. Considerable pain is produced, especially the first few times, but it is of short duration, and if the patient is told, when the instrument is introduced, that it will hurt a little, but few will complain, although in some cases it is necessary to give an anæsthetic. The operation is harmless. I have used this dilator for years, almost daily from one to ten times, and never observed any injurious effects from its use; still I have always been cautious, and have never used it when chronic pelvic cellulitis or peritonitis existed, as it might start up an acute inflammation. I will report only two cases to show the result of this plan of treatment.

Mrs. M., aged thirty-one, mother of eight children, youngest three years. In her last confinement, the placenta was removed three days after delivery. Never menstruated since, and complains of occipital and coronal headache; constipation; appetite fair; has no leucorrhea. Physical examination showed uterus to be perfectly healthy, but superinvolted, as it measured only two and one-quarter inches in length. I used the dilator, as above described, August 5th, 1881, and repeated August 12th, 19th, and 26th.

Menstruation made its appearance August 28th. I again used the dilator September 9th, 16th, and 23d. Menstruation September 27th. She did not return until April 18th, 1882, and then only because she missed the preceding month. Having excluded pregnancy, I used the dilator that day. She menstruated April 21st, and has continued to do so since. I only prescribed for the constipation during the early part of the treatment. She is now well, the headache, etc., having disappeared.

Miss H., aged nineteen, never menstruated; complains of headache, nervousness, and poor sleep; otherwise her health is fair. I prescribed a dozen aloe and myrrh pills, one to be taken at night, and told her to return for treatment. She returned December 23d, 1881, when I dilated the uterus as above described, after having examined her carefully, and not having found any diseased or abnormal condition of the generative



organs. Did not order any more medicine, nor during the whole course of the treatment. She lived at quite a distance, and I could only treat her every two weeks, as follows: January 3d, 1882; January 17th and 31st; February 15th. She menstruated for one day, February 22d. I again used dilator March 7th and 21st. Since then, she has menstruated regularly, and all her nervous symptoms have disappeared.

It is not my intention to write a long paper, and I will therefore not go into the question of ovulation and menstruation. I will not say that, by establishing or re-establishing menstruation, we also bring on ovulation, or that the latter process continues even during amenorrhea, but we must assume that by bringing on menstruation, that is, producing congestion of the pelvic organs, it is very probable that ovulation also returns if it has ceased.

All I claim for the use of a two-bladed uterine steel dilator in the treatment of amenorrhea is that it causes less pain than solid steel dilators, and is more readily introduced; that it is not dangerous in ordinary cases; that it can be used by the general practitioner; and that it will often bring on menstruation after ordinary medication has failed.

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#### A CASE OF LABOR IN A JUSTO-MINOR PELVIS, CRANIOTOMY, DEATH.

BY

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On July 18th, I was called to see A. W., colored, aged twenty-two. She was well built, of medium stature, and inclined to obesity.

No previous history, except that four years ago she had borne a child after a difficult labor. She had then been attended by a midwife. I found her lying quietly in bed, but with an anxious countenance. She had been in labor for twelve hours, her pains had entirely ceased, and she was somewhat exhausted. Procuring assistance, I administered one-half ounce of brandy, and then anesthetized her with chloroform. Tarnier's forceps were then applied, and locked after some difficulty. On traction

being made, the forceps slipped. A second attempt also failed. Hodge's forceps were applied with a like result. The head was found to be impacted at the brim, and could not be moved. On passing my hand into the vagina to attempt version, I found to my great surprise that the pelvis was so contracted as not to admit the breadth of the hand in the sacro-pubic diameter. This was a state of affairs that I had not suspected. However, I made an attempt to bring the feet down, manipulating the body of the child through the abdominal walls, but could only succeed in bringing one foot into the vagina. Two of my assistants then tried repeatedly, and also failed.

The patient took her chloroform well during all this time, and had lost very little blood. Her pulse had grown somewhat weaker.

Craniotomy being determined upon, I perforated the skull, crushing and removing the bone piecemeal with the cranioclast. The crotchet was then introduced, fixed, and traction made, but it was found impossible to move the head.

Turning was once more attempted, and a noose of strong cord was, after much difficulty, slipped over the foot in the vagina. After a great amount of traction, we succeeded in moving the body of the child, but the force used was so great that the limb parted at the knee. The hand was again introduced, and the other foot brought down after repeated attempts by all of us. Finally version was completed, the pelvis, and part of the body of the child delivered. The arms had slipped up to the side of the head, and although the cranium had been emptied of its contents, they both had to be pulled down before the shoulders would pass. The child—a male—was large and fully developed. The anesthetic was now discontinued. After waiting for about ten minutes, as there were no uterine contractions, the placenta was removed manually.

The patient had now completely recovered from the anesthetic. The uterus still remained uncontracted, though all known oxytocic measures were used. Her pulse, which had gradually been growing weaker up to the birth of the child, now left her, her breathing growing shallow and intermittent. Every means of stimulation was used, but all to no avail, the patient dying about fifteen minutes after the operation, after having been in labor for sixteen hours, and four hours after I had seen her.

An autopsy made on the following day showed no traumatic injury to the uterus, vagina, or vulva. The uterus was large, thin, and flabby. The bony pelvis was removed, and upon careful measurement its diameters were found to be as follows:

	<i>Brim.</i>	<i>Cavity.</i>	<i>Outlet.</i>
Conjugate,	$3\frac{3}{16}$ inches.	$3\frac{5}{8}$ inches.	$3\frac{1}{2}$ inches.
Transverse,	$4\frac{3}{8}$ “	—	$3\frac{7}{8}$ “
Oblique,	$4\frac{1}{8}$ “	$4\frac{1}{16}$ “	—

Between widest parts of crests of ilia, 8 inches.

Between ant. sup. spin. proc. of ilia,  $7\frac{5}{16}$  inches.

The bones were thick, healthy in character, and showed no signs of disease.

From these measurements, it would appear that the pelvis was of the variety known as the "justo-minor," for, although the shortenings of the diameters was not exactly in proportion, yet they were near enough so for the pelvis to be thus classed.

One point in the history that makes the case interesting is the fact that the woman was delivered, about four years previously, at full term, of a *healthy* child by the unassisted efforts of nature. I cannot conclusively prove that the first child had reached maturity; but this evidence is presumptive, for it is with difficulty that this class of people, so indigent and without any regard whatsoever to hygienic laws, raise their healthy children, and it is extremely rare ever to find a premature child who survives. This birth must have been made possible by one of three causes; a deficiency in ossification, the moulding of the cranial head, or the small size of the head. I can find no statistics of moulding of the head in the equally contracted pelvis, though under the general head of contracted pelves they are numerous. Mundé states a case (*AM. JOURN. OF OBST.*, May, 1873) of three successive full-grown children being delivered through a conjugate of two and three-fourths inches, by nature's effort alone. Lusk<sup>1</sup> gives a case of having delivered a child weighing six and one-half pounds by the forceps, without much difficulty, through a generally-contracted, flattened pelvis, with a conjugate of barely two and three-fourths inches. Baudelocque<sup>2</sup> says: "The woman may enjoy the same advantage even when the little diameter is but two inches and three-quarters, as I have seen several times, the uncommon suppleness of the bones of the child's cranium having favored the lengthening of the head and the change necessary for its passage." He goes on to say that, in a case in which there was great pelvic contraction, "the long diameter of the child's head was seven inches," and "the transverse thickness of the cranium two inches and six or seven lines. These children were in good health, and, the day after their births, their heads wanted very little of being of the dimensions usual at that time." So it is evident that moulding of the child's head could easily have ac-

<sup>1</sup> The Science and Art of Midwifery by W. T. Lusk, M.D., page 464.

<sup>2</sup> Abridgment of Heath's Translation of Baudelocque's Midwifery by W. P. Dewees, M.D.



counted for the birth of the first child. But none of these cases cited give the transverse diameter. If this be normal, moulding of the cranium could take place much more easily, so that a head could pass through a conjugate of two and three-fourths inches, with the transverse normal, with more facility than it could through a conjugate of three and three-sixteenths, with the transverse four and one-eighth.

But why should this moulding have taken place in the birth of the first child, and not in the second? This could only be due to the relative sizes of the two children. The first child is, as a rule, smaller than the second or third, and the size is also influenced by sex, males averaging a greater weight than females. In the present case, the child being a girl and the first born of the mother, we have every reason to suppose that it was of small size and passed after considerable moulding of the head through the contracted diameters of a deformed pelvis, through which the second child, a boy, being larger and more fully developed, was unable to pass.

Dr. Lusk, in a paper contributed to the American Gynecological Society, in 1879, called attention to the invariably fatal results which in extreme cases had followed the performance of craniotomy, and said "that, in the treatment of pregnancy, with justo-minor pelvis and conjugate under three and one-half inches, premature labor should be induced, or that, if too late, Cesarean section should be performed.

Dr. Taylor, in the AM. JOURN. OF OBSTETRICS, for August, 1883, in an article on the "Equally Faulty Pelvis," also recommends this course of procedure.

This case adds to the many already recorded where death has followed craniotomy at the superior strait, and should add force to the advice of Dr. Lusk to perform Cesarean section, Porro's operation, or laparo-elytrotomy, in similar cases.

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Two valuable points to be learned from this case would seem to be: first, to always, at the very first, make yourself acquainted with the size of the pelvis of every woman whose pelvis you do not already know, to whom you are called as accoucheur, and this especially where there is any marked delay in the descent of the head; this was not done in this case, or in the case reported by Dr. Taylor, in the August number;

and second, that, when you do craniotomy, do it at first and before the patient has become exhausted ; this can be done in nearly every case where the proper examination is made, and would be perfectly justifiable, as the results from the early operation are very much more favorable than from craniotomy, as ordinarily done.

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## OBSERVATIONS ON CERTAIN CEREBRO-NERVOUS DISORDERS PECULIAR TO WOMEN.

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BY

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AN increasing tendency to nervous and mental disorders, especially amongst women, has become manifest within the past few years. Thus, during the comparatively short period covered by the annual reports of the English commissioners in lunacy, the number of the insane has more than doubled, having increased from one in eight hundred to one in three hundred and fifty of the population. Moreover, whereas formerly lunacy was more prevalent amongst men, now, on the contrary, there are more insane women than men in this country. A similar observation may also be made with regard to the great increase of nervous disorders generally, and of hysteria, in particular, which are, as I believe, similarly etiologically connected with certain utero-ovarian disorders that have recently come into prominence.

Whether this view be correct or not, the subject itself is unquestionably one of practical interest, and, though long recognized by American authorities, especially Dr. H. Storer, of Boston, and Dr. Emmet, of New York, its importance is still unduly neglected by the majority of alienists, as well as by gynecologists in this country. Hence, having formerly brought some aspects of this inquiry before the Irish Academy of Medicine, I desire now to submit a few observations, mainly the result of clinical experience, on the relations be-

tween certain utero-ovarian disorders and other morbid conditions peculiar to women and the most frequent type of cerebro-nervous diseases, as exemplified by the protean forms of hysteria and the various degrees of mental derangement connected with pregnancy, parturition, and lactation.

The predominant influence of the reproductive system is manifest in women in every vital action from the approach of puberty until the menopause. Throughout this long period of existence, at every catamenial epoch there may almost invariably be observed as coincident, occurrences of constitutional and nervous disturbance. When menstruation has become fairly established and is normal in every respect, then this disturbance may be so slight in degree as to escape attention. But the earlier catamenial epochs, and every subsequent deviation from healthy menstruation, as well as the climacteric period of life, are, as a rule, accompanied by some manifestation of hysteria.

The influence of other disordered conditions of the utero-ovarian system are as marked in the same way as that of functional menstrual derangements. Thus, in the hospital to which I am attached, I have found that thirty per cent of all patients treated in the gynecological department (amounting in the five years, ending on the 1st of July last, to 2,445) presented symptoms of nervous disorder, varying from the most trivial hysterical complaints to the gravest forms of cerebro-nervous disease, and traceable to reflex irritation of utero-ovarian origin.

The functional connection between the cerebro-nervous and reproductive system is apparent in nearly all chronic uterine and ovarian complaints. In chronic endometritis and cervicitis, for instance, the general constitution soon sympathizes with the local disease. The patient loses flesh, suffers from cardialgia and dyspepsia, palpitation and intense headache, becomes cachectic-looking, despondent, anxious, excitable, or irritable to the verge of insanity. In other words, as the uterine disease progresses, its local evidences become obscured by its constitutional and nervous consequences. Foremost amongst these, hysteria in every variety, from the ordinary hysterical paroxysm, which is too generally wrongly looked on as of no pathological importance, to the gravest forms of



cerebro-nervous disorders, namely, epilepsy and insanity, which may result from neglect of the warnings thus furnished.

I shall now briefly refer to some of the most important mental disorders and nervous affections etiologically connected with uterine and ovarian disease, or functional derangements, by reflex irritation acting on the cerebro-spinal nerve-centres through the widespread ramifications of the sympathetic and vaso-motor systems.

*II. Mental Disorders Peculiar to Women.*—I have already pointed out that the rapid increase of lunacy in these countries is a circumstance of the gravest social, as well as medical interest, and one which concerns none more particularly than those who are the usual advisers of women in all their special ailments.

On referring to the reports of the lunacy commissioners for the last year, we find that there are 85,167 registered lunatics in Great Britain. Of these, 46,586 are females; whilst in the Irish private lunatic asylums the greater prevalence of insanity in women is still more evident, there being 385 female lunatics and only 236 males.

Amongst the causes of this increase of female insanity of late years must be reckoned not only the prevalence of uterine or ovarian disorders already referred to, but also some other causes from which, until recently, women were comparatively exempt. Nowadays, women are not only subject to those special causes of nervous disorder which arise from utero-ovarian irritation, but, moreover, in too many cases they now voluntarily expose themselves to all the accidental causes of insanity to which men only were formerly subject. This is one result of that hopeless contest in which they are engaged who seek to unsex themselves by assuming all those masculine privileges and modes of life that may be too dearly purchased at the expense of the increased tendency to cerebro-nervous disorder by which in such cases outraged nature avenges her violated laws.

Insanity from the development of hysteria, and similarly associated with functional derangements of the female reproductive organization, is of unquestionable frequency. Moreover, those forms of insanity which thus originate from reflex utero-ovarian irritation are generally misunderstood or neg-

lected. The mental derangements referred to, associated with peri-uterine disorders, are usually characterized by exaggerated nervous susceptibility, intense egotism, manifest in the concentration of the patient's whole attention on the symptoms of her fancied complaint, extreme excitability of mind, and irritability of temper. In most instances of this kind, there is complete perversion of the moral faculties which (as in cases of so-called moral insanity or *folie raisonnée*) are more apparently affected than the intellectual powers. But, at the same time, some disturbance of the intellectual power, however obscure or concealed it may be, is always associated with the perversion of the moral faculties. And as hysterical insanity progresses, the often long-concealed illusions of the patient become developed into actual and obvious delusions.

The etiological connection between catamenial derangements, especially suppression of the menses, and mental disturbance has been long recognized. Amenorrheal insanity was described as far back as the time of Pinel, who relates, amongst others, the case of a girl who was in a state of dementia which continued for some years, during which she never menstruated. One day, however, she suddenly ran to her mother, exclaiming, "I am well." The catamenia had just flowed, and her reason was immediately restored.

Mental disorders in women are not only thus frequently associated with menstrual irregularities, but are also as frequently connected with reflex irritation from utero-ovarian disease, and still more obviously occur in connection with puerperal septicemia.

Before alluding to the latter form of cerebral disturbance as met with in obstetrical practice, however, I shall briefly refer to mental derangement as seen in connection with gynecological causes, and shall here cite a case which illustrates the probability in some instances of gynecologists curing insanity.

[An unmarried lady, about 46 years of age, who was then a patient in a lunatic asylum, was placed under my care some years ago under the following circumstances: Having been always previously of a particularly nervous temperament, her excitability of mind and irritability of temper became, as life advanced, more and more pronounced and ultimately attended with delusions, religious despondency, and suicidal tendencies. Her friends were

then advised to place her under restraint, and did so with the expectation that removal from all external sources of mental irritation, and the care she would enjoy in one of the best-managed of our private asylums, would insure her recovery. At the end of two years, however, her mental condition was no better than when she entered the asylum, and her physical health was much worse. It was then suggested by one of her family that, as she had formerly been under treatment for some uterine disease, a gynecologist should again see her. On examination, I found considerable tumefaction and evident tenderness above the left ovary. The labia were enormously hypertrophied, the vagina intensely congested and bathed in an offensive leucorrheal discharge. The uterine cavity was normal in size, the cervix elongated and cartilaginous, and the os surrounded with a ring of deep erosion. The patient was emaciated and cachectic looking. Her breath was fetid, tongue coated, and pulse quick and weak. Under these circumstances the necessity for gynecological care appeared obvious. But as my opinion on this point was not in accordance with that of the visiting physician to the asylum, a further consultation was proposed. My lamented friend and former teacher, the late Dr. McClintock, now saw her with me, and, as he fully indorsed my view of the case, she was removed from the asylum. After some months the uterine and ovarian irritation yielded to treatment. At the same time the mental and nervous disturbance gradually subsided, and the patient was again enabled to resume her former place in society.

Such a case as that described is by no means singular in its causes and symptoms. Unfortunately, however, it is most exceptional in its treatment and result. The general non-recognition of utero-ovarian disorders amongst the insane in lunatic asylums is easily understood. Most alienists give little, if any, attention to the study of gynecology. Moreover, there is commonly amongst those suffering from mental disease a peculiar insensibility to physical suffering, apparently caused by impaired nutrition of the nerve-centres; and therefore the usual evidences of disease do not disclose themselves in the ordinary course. Under such circumstances, no complaint of uterine disorder being made by the patient, the disease may unsuspectingly run its course.

Taking into consideration, therefore, first, the general prevalence of utero-ovarian disorders; secondly, the vast number of women now confined in our public and private lunatic asylums; thirdly, the common non-susceptibility of the insane to the ordinary symptoms of their intercurrent diseases, and, lastly, the fact that alienists generally pay little, if any, atten-



tion to gynecology, I venture to repeat that amongst the sixty thousand women who are now secluded in our lunatic asylums there are many who are unnecessarily and improperly so restrained, as they are merely suffering from reflex nervous irritation arising from neglected uterine or ovarian disorders, and that a certain proportion of such patients might be restored to the *mens sana in corpore sano* by the recognition and appropriate treatment of their physical disease.

For many obvious reasons, however, it would be most undesirable and injurious that, more especially in the insane, any uterine treatment or examination should ever be resorted to without absolute and well-proven necessity. The managers and medical superintendents of lunatic asylums, however well-qualified in all the other respects for their responsible offices, are certainly, as a general rule, by no means competent to pronounce any opinion concerning the necessity for uterine treatment, or as to the mode by which this should be carried out. Hence it seems to me desirable that in any future legislation on the subject of insanity there should be some provision made for rendering special and independent gynecological advice available to the female patients under restraint in every lunatic asylum, public or private.

*III. Mental and Nervous Disorders of Pregnancy and Puerperal State.*—In obstetric practice we meet with many striking illustrations of the importance of uterine causes acting on the mental and nervous functions.

During pregnancy there is a great tendency to nervous and cerebral functional disturbance, and to this may be ascribed those otherwise unaccountable alterations in taste and dispositions, that irritable condition of mind and temper—those unreasonable likings and aversions, longings and foolish fancies which in some women invariably accompany pregnancy.

Familiar instances of sympathetic or reflex nervo-mental disorder arising from pelvic irritation will at once occur to every obstetrician. Of this nature, for instance, is that transient delirium so commonly observed at the termination of the second stage of labor during the exit of the fetal head.

The peri-uterine origin of certain forms of mental disorder is strikingly evidenced in puerperal mania, or insanity consequent on parturition. This is usually preceded by the prema-

ture suppression or diminution of the lochia, which become fetid as well as scanty in such cases. Hence the associated mental disturbance resembles those forms of delirium that occur in the course of the many other diseases in which toxemia or blood poisoning, whether from arrested excretion or from auto-infection results in functional cerebral disorder. It must be admitted, however, that all depressing mental influences have also a great share in the causation of puerperal mania. Thus, of 1,354 cases of puerperal disease collected from various authorities, in 883 the patients were unmarried; and of the cases under my own observations, twelve out of twenty patients were unmarried. With regard to the prognosis in such cases, it may be observed that the statistics referred to show out of every 1,000 cases of puerperal mania, in 668 instances the patients recovered within six months after the attack. The majority of cases terminate in recovery, the next most frequent result is death, and the least common event is confirmed insanity.

*IV. Hysterical Pseudocyesis.*—In connection with the cerebro-nervous disorders of pregnancy, we may briefly allude to that curious mental condition in which a sterile woman either fancies herself to be pregnant or feigns to be so. This condition is one of which I have met with many instances, some of which may be found in a paper of mine on Pseudocyesis in the fourth volume of the *Dublin Obstetrical Transactions*. Spurious pregnancy is invariably associated with functional derangement of the utero-ovarian system, and usually occurs about the time of the final cessation of menstruation, or climacteric period, although more than once, however, I have been consulted in cases of spurious pregnancy occurring in women under twenty years of age. In many instances I have found the symptoms of hysterical pseudocyesis hardly distinguishable from those of true pregnancy. Thus we often meet with cases of complete amenorrhea, followed by morning sickness, turgescence of the mammae, and enlargement of the abdomen occurring in middle-aged hysterical married women who desire to be thought pregnant. Sterile women under such circumstances not uncommonly become hysterically insane on this subject, and take extraordinary and often successful pains to persuade those about them, as well as themselves, that they are

"as ladies who love their lords should be," when only suffering from the change of life, dyspepsia, dropsy, or mere obesity.

*V. Epilepsy and Hystero-Epilepsy.*—For our present purpose these may here be considered together, as every variety of epileptiform disease in women is most frequent in those of a hysterical temperament, and is generally found associated with amenorrhea or some other disorder of the sexual system. Moreover, so similar are the two forms of epileptiform convulsions named in their symptoms, that they can only be distinguished by Charcot's temperature test. My experience of hystero-epilepsy differs from that of Dr. Grailey Hewitt as to the importance of uterine displacements in such cases. Of seventeen instances of the kind under my observation, in only four was any deviation from the normal position of the uterus noted.

As a rule, all epileptiform diseases in women are preceded by hysterical hyperesthesia, and in some instances by actual delusions. These symptoms become still more marked after the seizure, especially at the time when consciousness begins to return immediately after the paroxysm. We may, then, frequently observe that the patient slowly and gradually recalls to mind what has happened immediately before or even during the paroxysm. Occasionally there is curious interblending of the patient's real and fancied symptoms, in which the phenomena of the pre-epileptic aura may come into startling prominence, and be insisted on as of actual occurrence. In this way the condition referred to may, as in a recent *cause célèbre*, become of serious medico-legal interest.

*VI. Hysterical Trance.*—Diminished nervous functional activity is a very striking, although a less frequent, secondary, or reflex consequence of uterine disorders. The most remarkable illustration of this is hysterical trance, or lethargy, in which the ordinary phenomena of life are temporarily more or less completely suspended. "One of the most curious forms of hysteria," says Dr. Elliotson, "is long-continued insensibility, and is called a trance. Sometimes there is insensibility for a few days, and sometimes for many weeks."

In the *Proceedings of the Dublin Medical Society*, those interested in the subject may find, in a paper of mine, well authenticated cases in which patients in a state of hysterical trance, so profound as to counterfeit death, have been actually



consigned to the tomb, or were only rescued from it by some happy accident. I have myself met with many instances of hysterical lethargy. In one of these, the patient remained in a condition hardly distinguishable from death for nine days; in another, the trance lasted for one hundred and forty hours. In both cases there was accompanying menstrual disorder, and both patients ultimately recovered.

*VII. Hysterical Paralysis.*—This is another form of reflex functional nervous lesion which, in some instances, is traceable to utero-ovarian causes. In such cases, we occasionally find every degree of loss of voluntary power, from the most trivial local weakness to complete paraplegia. I recently published a case of this kind in which a young lady, aged nineteen, was bedridden for upwards of two years from apparent paralysis. Every treatment proved useless, although she was tortured with every expedient that the ingenuity of the numerous physicians consulted could suggest. At the end of this period, however, she menstruated for the first time, and thenceforth recovered rapidly and completely.

*VIII. Non-Physical Cases of Cerebro-Nervous Diseases of Women.*—There are some causes of the prevailing tendency to cerebro-nervous disorders observable in women which, though moral rather than physical in their nature, cannot be wholly ignored in considering the subject of this paper. I shall now, however, merely recapitulate some of the most important of them, *viz.*:

First, the premature or undue stimulation and abuse of the sexual functions. This we will not now dwell upon, but its importance is unquestionable.

Secondly, amongst the moral predisposing causes of the conditions of mind and body comprehended in the term hysteria, must be included, on the one hand, the misdirected tendencies of female education, in those cases in which it is sought to force women's intellect into channels and pursuits which nature has obviously intended for the opposite sex. On the other hand, the neglect of suitable moral, mental, and physical training during youth, or of any fitting occupation in more mature life, which is so general in the better classes, and amongst even those who pass as fairly educated women, that it must be

estimated as a potential factor in the etiology of the special cerebro-nervous disorders of females.

Thirdly, some reference is necessary in this connection to the increasing prevalence of alcoholism in all classes of modern society, and amongst women as well as men, the consequences of which are too often brought before us in the diseases now under consideration. Moreover, to the utero-ovarian disorders which have been alluded to, as connected with nervous and mental complaints, may in some instances be also ascribed a place in the causation of intemperance in women. I have repeatedly traced the craving for alcohol in confirmed inebriates to the first painful menstrual period when stimulants are too commonly pressed by foolish advisers. The pains of dysmenorrhea once thus relieved, at the next epoch the patient naturally, and no longer unwillingly, seeks similar solace. And thus "this unkind nepenthe" is gradually employed in increasing doses, until at last the victim of dysmenorrheal alcoholism perhaps unconsciously becomes a habitual, and too frequently an incurable, drunkard.

On some future occasion, I trust to be permitted an opportunity of supplementing this paper by some observations on the treatment of the morbid conditions of mind and nervous complaints peculiar to the female sex, this topic being one to which the length of the present communication prevents my making any allusion. My chief object has been to recall attention to those still generally misinterpreted cerebro-nervous affections which are connected with diseases peculiar to women. If the views now enunciated be confirmed and acted on by other practitioners, then I venture to believe that the treatment of the complaints discussed will thereby be materially simplified and improved.

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TWO CASES OF ASPIRATION OF DERMOID CYSTS FOLLOWED  
BY INFLAMMATION.

BY

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THE fact is well recognized that tapping and even aspiration of dermoid cysts is, in a certain number of cases, followed by serious and even fatal inflammation. Why this should be so, how often these accidents are liable to occur, and to what extent the possibility of their occurrence should formally prohibit this kind of operative interference, are all questions hitherto unanswered. The desire of contributing in ever so slight a degree towards their solution, justifies the recital of other cases.

CASE I.—M. L., Alsatian by birth, cook by profession, æt. 31, unmarried.

The patient was admitted to the New York Infirmary in March 1881. She had always been perfectly healthy until two weeks previous to admission, when, three days after the close of a menstrual period, she lifted out of an ice-box a piece of meat weighing 15 lbs., and immediately felt a sharp pain in the right inguinal region. The pain continued to increase during a week, at the end of which I was requested by her mistress to see her. I found the uterus completely retroverted and sensitive, while the region of the right broad ligament was occupied by an elastic tumor, the size of a small orange. This was easily overlooked by the vaginal touch alone, but detected with facility by bimanual palpation. The left cul-de-sac was more sensitive than the right, and here could be felt a small irregular body about the size of an English walnut.

The diagnosis was made of cystic tumor of the right ovary, enlargement and degeneration of the left, and sudden displacement of the uterus under the influence of the effort, the latter giving rise to the symptoms of pain. I advised the admission of the patient to the New York Infirmary, where I continued to visit her. The uterus was replaced with cotton pads, rest in bed, and other appropriate treatment instituted for relief of the pelvic sensitiveness. A menstrual period occurred one week in advance of time; and after this the patient was sent for a few weeks into the country.

She returned on the 28th of April, much improved. All pelvic sensitiveness had disappeared, and the uterus having remained in a normal position. The cyst was somewhat increased in size. On the 29th it was aspirated per vaginam. The operation was effected with great facility, but when about  $\frac{3}{4}$  ij. of a thick bright yellow fluid



had been withdrawn, the patient complained of pain. The aspirating needle was at once removed, the patient put to bed, hot stupes applied over abdomen, and opium administered. The fluid solidified on cooling, and showed abundance of cholesterine scales, and many granular corpuscles of varying size.

On the morning of the 30th, the pain was at first almost gone, but at noon returned, with a rise of temperature to  $102^{\circ}$ . The pelvic pain subsided, but was replaced by severe pain in the left side of the chest, with harsh and hurried respiration, at first slight friction sounds, then prolonged expiration, the whole accompanied by considerable fever. Examination of the pelvis during this pulmonary attack failed to detect any exudation.

On the 5th and 6th of May, the temperature did not rise above  $100^{\circ}$ . On the 7th, pain returned in upper part of *right* lung, and temperature rose to  $101^{\circ}$ . On the 8th, there was a marked recrudescence of the pelvic pain, accompanied by nausea and vomiting. Pelvic examination discovered tenderness and considerable swelling in the right broad ligament. On the evening of this day the temperature rose to  $104^{\circ}$ .

By the 12th the patient began to suffer from sweating. The pelvic tumor having increased very considerably in size, suppuration in the cyst was suspected. On the 14th, the tumor nearly reached the level of the umbilicus. There was much sweating, and the face of the patient had become dusky.

The crisis, which seemed immediately dangerous, was relieved by the premature occurrence of menstruation on the 15th; the temperature falling to  $100\frac{3}{4}^{\circ}$ , pulse to 84. The temperature, however, rose again, and oscillated between 100 and  $102.5^{\circ}$  until the 22d, when it fell to  $99.4^{\circ}$  and from this time remained between that and  $103\frac{3}{4}^{\circ}$ .

On the 22d, the patient had a thin, light-colored stool, and after this the tumor was found to be very much diminished in size and circumscribed. A similar stool was passed on June 1st, which upon standing deposited a thick sediment. In this the microscope discovered many broken-down pus cells and also oil globules.

On the 2d of June, a similar stool occurred, and this was shown to contain an ounce of pus. Pus continued to be discharged from the rectum with the feces until the 3d of August. The quantity varied, sometimes being as much as 5 viiss. Sometimes a day would pass without any appearing. The passage was generally followed by considerable abdominal pain. The second menstruation took place on the 12th of July, with very little pain. On the 3d of August, fever (T.  $104$ ), nausea, and vomiting returned, with severe pelvic pain. On the 6th, collapse (from peritoneal hyperemia?) seemed threatened; the patient lay with closed eyes, and not speaking unless addressed; the whole body was covered with a cold sweat, the pulse feeble and intermittent, the rectal temperature  $98.5$ . Under the influence of stimulants and hot applications to body, the patient, towards 7 P.M., revived, and the next day (August 7th) the symptoms had entirely disappeared. Men-

struation began on the 14th. This was the third which had occurred since the operation, the first having been on the 15th of May, the second on the 12th of July.

The September menstruation came regularly on the 15th, and with very little pain. On the 2d of October, there was again a slight discharge of pus.

The Infirmary record ceases Oct. 7th, 1881. During the ensuing year M. L. remained out of service, and on two or three occasions suffered from a recurrence of pelvic pain, followed by discharge of pus from the bowel. Her health, however, gradually improved, and during the last year she has re-entered the service of her old employer.

CASE II.—A. P., aged 28, consulted me for severe vesical tenesmus, which had lasted for two years. The bladder and urine were perfectly normal, but the uterus was anteverted, apparently in consequence of the presence of a cystic tumor, which existed in the right broad ligament, and seemed to be about the size of a large orange. The patient experienced from this no local symptoms, except the vesical tenesmus, not even dysmenorrhea. But she suffered from obstinate dyspepsia and many distressing neuro-pathic symptoms, all dating from the onset of the vesical tenesmus.

Various efforts were made for the relief of these various symptoms, but all were unsuccessful. At last it was decided to aspirate the cyst, partly with a view of ascertaining the nature of its contents, partly to see if the uterine anteversion and vesical tenesmus would disappear after even temporary collapse of the cyst, and whether the general neurotic symptoms would then be relieved.<sup>1</sup> In that case it was intended to propose early resort to the radical operation of ovariectomy. Aspiration per vaginam was made with the usual antiseptic precautions, and no pain was experienced during the operation. The fluid exactly resembled that in the first case, and its appearance, macroscopic and microscopic, left no doubt that the cyst was dermoid.

The patient was placed in bed, and absolute repose enjoined. She remained perfectly comfortable for forty-eight hours; then had a sharp attack of pain (without fever), in the right hypogastrium. This was controlled in a few hours by opium and hot stupes. For ten days, the rest in bed being continued, there was no pain, only sensitiveness to pressure in the right cul-de-sac. Then another paroxysm of pain occurred, of equally short duration with the first, and also apyretic. Two or three days later, the patient returned to her home at a little distance from the city. During the following week she walked about a little, suffering constant, though dull, pain. Menstruation set in, a week in advance of time, accompanied with violent pains and the development of an extensive tumefaction in the right hypogastric region. I saw the patient at this time, and found a swell-

<sup>1</sup> The indication was identical with that which was met by aspiration in Dr. Goodell's case, related in *Trans. Gyn. Soc.*, vol. ii.

ing in the right broad ligament, pressing down into the vagina, so as to almost occlude it, while in the abdomen, exquisite sensitiveness and dullness on percussion extended over the entire right hypogastric region. It seemed probable that suppuration had occurred in the cyst, and had been attended by pericystic peritonitis.

As the patient was out of town, the care of her case passed into other hands. Its subsequent history was as follows: The inflammatory attack was tided over by the aid of large quantities of opium. Sufficient constant pain, however, remained, to keep the patient closely confined to bed, and even unable to turn over. At the second menstruation after the operation, the pain was scarcely exacerbated, and from this time the daily dose of opium was gradually diminished, until, just before the third menstrual period, it was entirely stopped. Although some pain still existed, and the patient remained in bed, she seemed to have touched upon full convalescence. Then she was one day seized suddenly with an extremely violent pain in the hypogastrium. Large doses of opium were given, controlling the pain with great difficulty; but constant vomiting rendered nutrition almost impossible. Perhaps from this fact, the patient was unable to resist the peritonitis, and succumbed in gradual collapse on the fourth day.

During both attacks, as during the briefer periods of pain experienced in the first ten days after the operation, the patient had no rise of temperature; only the pulse was accelerated.

At the autopsy a peritonitis was found limited to the pelvis, and much more intense on the right side, where the intestines were well glued together, especially at the anterior and posterior aspect of the cystic tumor. The cyst was somewhat larger than the largest-sized orange. The walls were thick, without the slightest trace of rupture. I did not see the specimen in the fresh state, and therefore could not myself examine the contents, but the physician who made the autopsy described these as consisting of a cheesy detritus, mixed with a thick yellow sebaceous fluid, and a considerable quantity of hair. There was said to have been no fresh pus in the sac. Three molar teeth adhered to the cyst-wall, one of which bore a milk tooth.

The cyst did not spring from the ovary, but lay close behind it, in the folds of the broad ligament. The ovary adhered to the cyst, but was distinct from it, and its tissue did not pass into it. The Fallopian tube passed in front of the cyst, its fimbriated extremity being glued to the ovary by fibrinous exudations. The peritoneal fold, forming the anterior portion of the broad ligament, was adherent to the peritoneum lining the anterior wall of the pelvis.

Both ovaries contained what seemed to be menstrual corpora lutea, that on the right, the cyst side, being the most recent. The uterus was filled with blood.

On the inner surface of the cyst-wall, at the point at which the aspirator needle must have penetrated, was a small patch of hyperemia. A little to the right of this, between the external (per-



itoneal) surface of the cyst and a fold of peritoneum united with it by inflammatory adhesions, [was another patch of hyperemia.

It would seem, therefore, that the aspiration first excited inflammation in a limited area on the internal surface of the cyst; that the morbid process extended by continuity through the cyst-wall to its peritoneal surface, exciting a localized peritonitis with sero-fibrinous exudation, which gradually glued together the cyst, the ovary, and the fimbriated extremity of the Fallopian tube.

The cheesy detritus found in the cyst indicated that suppuration had occurred at the first attack of inflammation, three months before death. But the last and fatal attack seems to have been limited to the peritoneum.

During the interval between the two attacks, the patient suffered a good deal from sweating, which might have been ascribed either to the opium or to absorption from the cyst.

Two circumstances especially call for comment in the foregoing cases: 1st. The fact that inflammation was excited by so minute a traumatism, guarded moreover by "antiseptic precautions." 2d. That symptoms of inflammation appeared in both cases about forty-eight hours after the operation, continued with moderate severity until a menstrual hemorrhage set in, one week in advance of the time, then subsided; did not exacerbate at the succeeding menstrual period, but returned with great intensity at the third menstruation after the operation.

It may be inferred that at the two menstrual periods which were attended by exacerbation of the symptoms, ovulation occurred in the ovary adjoining or containing the cyst, while the intermediate menstruation was associated with ovulation in the ovary of the opposite side.

The exacerbation of the symptoms during the menstrual process may be explained in one of several ways. The most usual explanation is, that the menstrual "congestion" overpoweringly increases the existing hyperemia. Normally there is no dilatation of blood-vessels in the peritoneum at menstruation, but the subperitoneal vessels of the ovaries and the Fallopian tubes are widely dilated,<sup>1</sup> and an affluence of blood to them may

<sup>1</sup>See Case II. in Leopold's collection, *Archiv für Gyn.*, Bd. 21, 1883. As we propose to show on a later occasion, these vessels are not dilated, but developed, by new growth.

readily pass into peritoneal vessels, dilated by inflammation, and distend them still further.

Tait<sup>1</sup> asserts that during inflammation there is an active movement of the Fallopian tube which results in the inclosure of the ovary by the pavilion, and that, in some unexplained way, this movement is the essential cause of the menstrual hemorrhage.

This suggestion is at present rather an ingenious *vue d'esprit* than a statement resting upon proof. But the circumstances attending the death of our second patient accord very well with the hypothesis of such an active movement of the tube imbedded in recent inflammatory exudation. The autopsy showed that at the time of the third menstruation the exudation gluing the tube and ovary together had become somewhat firmly organized. The sudden and violent pain which, in the midst of relative well-being, ushered in the fatal attack, and which led to the suspicion of rupture of the cyst, also suggested the rupture of a peritonitic adhesion, and this might have been effected during an active movement of the fimbriated extremity of the tube in an ineffective attempt to grasp the ovary.

A third explanation of the menstrual peritonitis is that during the menstrual dilatation of the ovarian blood-vessels in the neighborhood of the cyst, the vessels of the cyst-wall were also dilated, permitting irritants to pass more readily from the cyst cavity to its peritoneal surface.

The occasional danger of the aspiration of pelvic cysts, and also the greater liability to danger offered by dermoid cysts, has been often commented upon. Few authorities, however, would assert, with Tait, that an abdominal exploratory incision is far safer than aspiration per vaginam. Since the indication for exploring these tumors, nevertheless, often presents itself, it is certainly more desirable to ascertain, if possible, the reason why so trifling an operation should ever prove dangerous, than to content one's self with the advocacy of another operation that cannot but be serious.

We think that at the present day the danger can only be explained on the hypothesis that organic germs, either bacteria or their spores, are carried into the cyst with the aspirating

<sup>1</sup>Diseases of Ovaries.

needle. The operation, in fact, exactly imitates the laboratory experiment of infecting nutritive fluids by dipping into them needles to which bacteria have previously become attached. The greater vulnerability of dermoid cysts would imply that their contents constituted a soil peculiarly favorable for the development of bacteria.

It is usually assumed—as it was in the management of the two cases we have related—that this danger of bacterial infection is entirely obviated by the “antiseptic precautions” taken. The aspirator needle was allowed to lie for a certain time in a five-per-cent solution of carbolic acid, and a similar amount was passed through it just previous to the operation. But, as in much other clinical work which professes to apply scientific principles, the latter fail because not applied with the quantitative precision which alone should entitle them to be considered scientific. Evidently, when destruction of organic life is desired, the elements of time and of the degree of concentration of the poisoning agent are of primary importance.

The experiments made by Koch and his pupils<sup>1</sup> at the German Health Bureau indicate, we think, a very sufficient explanation of the disasters attendant upon such cases as ours, and the many others like them which have been reported—disasters which defy the expectations based on “full antiseptic precautions.” Koch experimented almost exclusively with the tenacious bacilli found in garden mould and with the bacilli of anthrax and their extraordinary resistant spores. So that, as he himself points out, the conclusions of his experiments can only be applied with reserve to bacteria still untested, or to disinfection in cases where the very existence of bacteria is as yet only a probable hypothesis. But, with these reserves, the result is none the less instructive. Koch found that threads infected with anthrax spores required to lie for twenty-four hours in a five-per-cent solution of carbolic acid in order to destroy their power of reproducing themselves when transferred to a suitable soil. Indeed, after twenty-four hours, the arrest of the reproduction was not quite complete, although it was so after forty-eight hours.

When, however, the threads were infected with anthrax

<sup>1</sup> *Mittheilung aus dem Kaiserlichen Gesundheitsamte*, Bd. I., Berlin, 1882.



bacilli free from spores, a sojourn in a five-per-cent solution of from two to twenty-five minutes sufficed to destroy life, so that no reproduction occurred when the threads were transferred to gelatin.

Even a one-half-per-cent solution sufficed to destroy bacilli.

Other experiments showed that, so long as either spores or bacilli remained in contact with carbolic acid, added in the proportion of eight drops of a two-per-cent sol. to ten ccm. of nutritive fluid—blood serum—no development took place, although this began as soon as the spores were removed from its influence.

The results of this experiment agree with those of the large number which have been made to test the disinfectant power of various agents by their capacity to arrest the development of bacteria while remaining in contact with them.

Applying deductions by analogy from such laboratory experiments to the clinical case of cyst aspiration, we might infer, when the customary methods of disinfection seemed to be successful, that is, when operations protected by them excited no inflammation, that the aspirating needle had only been exposed to infection from the more vulnerable forms of bacteria. But when, in spite of precaution, inflammation does arise, difficult or impossible to explain by the minute traumatism, we must assume infection of the needle by spores, for whose destruction the antiseptic method employed has proved too superficial.

In both our cases, the course of events was singularly in accord with that observed after voluntary inoculation in a culture experiment. In the first case, momentary pain was experienced just before the needle was withdrawn; this rapidly subsided, not to return for twenty-four hours. In the second case, there was no pain at all for forty-eight hours. This latent period corresponds to that elapsing in the culture experiments before the development of the inoculated germs has reached such a degree as to become perceptible.

In the first case alone was there fever, and also the rational and physical signs of pulmonary congestion accompanying the first rise of temperature. During the persistence of the pulmonary symptoms, the abdominal pain was so moderate as to embarrass the diagnosis of the true cause of the fever. In

view of the subsequent history, we may perhaps attribute this to a direct generalized infection, of which the pulmonary congestion was itself only a symptom. It certainly antedated both the suppuration of the cyst and the (possibly) perieystic peritonitis which subsequently occurred.

The subacute inflammatory process, of three months' duration, which followed the initial symptoms in each case, may, on the hypothesis, be attributed to a continuance of the bacteria culture. The menstrual exacerbations in each case indicated acute and extensive hyperemia of the peritoneum which, in the first case, happily subsided on both occasions, but in the second patient induced localized fibrinous peritonitis, and ultimately collapse from a renewal of generalized peritoneal hyperemia. These phenomena seem attributable to the suppuration which had been induced—as the hypothesis indicates—by bacteria culture, and not directly to bacteria infection. It is not, however, altogether easy to understand why the existence of a focus of suppuration in the neighborhood of the peritoneum should convert the localized menstrual hyperemia into a generalized paralytic congestion of peritoneal blood-vessels. The perforation of the bowel in the first case, the perieystic exudation found at the autopsy in the second case, showed that the peritoneal inflammation began on the serous wall of the cyst, reaching it by continuity from the cyst cavity.

The final practical conclusion should be, that for aspiration of cysts, especially such as may be suspected of being dermoid, the aspirating needle should be immersed for forty-eight hours previous to the operation in a five-per-cent solution of carbolic acid.

It is a question whether the laboratory practice of disinfecting the needle by heating it to redness could be clinically utilized, or whether the injury to the needle would render this impracticable.

NOTE.—It is noticeable that both operations were performed in a hospital, where the aspirator had been standing a number of months.

#### APPENDIX.

“Tapping of an ovarian cyst should not be undertaken when the radical operation can be performed, nor in any case unless urgent necessity exist, for it often excites suppura-

tion. In dermoid cysts (after tapping), three out of eight cases ruptured into the abdominal cavity, nine cases ulcerated into bowel." (Bryant, "Ovariectomy," 1877.)

Atlee ("Ovarian Tumors," 1873) asserts that dermoid cysts are "rarely suitable for extirpation. They are very prone to inflammation and suppuration, with consequent rupture into the peritoneum, intestines, or bladder." He relates one case: Cyst tapped, proved to be dermoid; three months later it ruptured into the bowel; the patient ultimately died of cachexia.

[This rupture at the third month corresponds with the history of the two cases related in the text.]

The peculiar liability to suppuration of dermoid cysts is illustrated by a remarkable case presented by Dr. Mundé to the New York Obstetrical Society in 1877. A dermoid cyst inflamed during parturition and caused a localized peritonitis, confined the patient to bed for five months, and ultimately ruptured into the vagina, and continued to discharge its contents during a next period of twelve months.

Dr. Mundé quotes four cases of dermoid cysts discovered during or immediately after labor, two of which suppurated, one with a fatal termination (quoted from a paper of Barnes on "Retrouerine Tumors," St. George's Hospital Reports).

The following cases, all of which have been rather frequently referred to, illustrate the dangers of aspiration; but the aspirated cysts were not dermoid:

I. Goodell. Second aspiration, first innocuous; suppuration of cyst; removal; recovery. ("Trans. Gyn. Soc.," vol. ii.)

II. Winz. Quoted by Goodell in same paper. Also second aspiration; suppuration.

III. Lusk. ("Trans. Gyn. Soc.," vol. ii., p. 277.) First aspiration; symptoms peritonitis; death third day.

IV. Fauntleroy (*Va. Med. Monthly*, Nov., 1875). Cyst punctured with hypodermic syringe; local subacute peritonitis, resulting in adhesions, discovered a month later at ovariectomy; patient died.

V. Mundé (*Amer. Jour. Med. Sc.*, 1876). Aspirations; subacute peritonitis on fifth day; operation on twelfth; death from septicemia six days later.

VI. Peaslee (*AM. JOUR. OBSTET.*, Feb., 1876). Suppuration of cyst forty-eight hours after aspiration.

In addition to these, Thomas ("Diseases of Women," 5th



ed., p. 716) cites similar cases from Atlee, Little, Gillette, Peruzzi, Schnetter, Skene, and his own experience.

## CORRESPONDENCE.

### BEHAVIOR OF THE UTERUS DURING ORGASM.

TO THE EDITOR AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—When reading over in your journal of July and August the article by Dr. Chapman on Gynec Diseases, the letter that followed from Dr. McCully, and your editorial comment, I was reminded of an “incident” that took place in my practice in Jamaica, W. I., in the year 1880, showing the peculiar action of the uterus when the patient was influenced by what appeared to be an “orgasm.” In the year 1880 I was attached to the Government Medical Service of Jamaica, and stationed at Annatto Bay, when I was asked by a “confrère,” Dr. French Mullin (also of the service and in charge of the Port Main Hospital, distant about fourteen miles from me), to go there and see a case of “Atresia Vaginæ.” I found the patient to be a well-developed black girl, about eighteen years of age. She had never menstruated, complained of great pain in lower part of abdomen every month, and had a lump, she said, in her belly.

On examination, I found a tumor as large as a child's head immediately above the pubis. Mons Veneris covered with hair and a complete absence of vagina. Examination by bladder and rectum convinced us that the tumor was the uterus, and as there was a distinct mark, or line, from the urethra to the fourchette, where the vagina ought to be, we decided to make an opening, in hopes of reaching the vagina proper. Before proceeding to use cutting instruments, and after putting the patient well under chloroform, I decided I would try whether I could not penetrate through the dense membrane with my finger. Sharpening my finger-nail, I proceeded to scratch and bore forcibly with my finger; after a little, I distinctly felt the membrane give way, and my finger entered as far as the first joint. At this stage of the proceedings Dr. Mullin and myself were astonished to see the peculiar actions of the patient, and the *tumor*. She threw her pelvis upwards and forwards till the generative organs were almost

horizontal in position, whilst the "*tumor*" visibly worked upwards and downwards from the symphysis to the umbilicus; this peculiar phenomenon lasting for at least thirty seconds, and then ceased, when I continued to force my finger onwards, tearing through several layers of cellular tissue, and arriving at a dense membrane, through which I could not penetrate, but through which I could distinctly touch, "*à la ballottement*," the tumor, which felt like the uterus at six months. We kept the parts dilated, and at next menstrual period the membrane bulging out, was punctured, and the menses discharged themselves through the natural channel.

Trusting that my "incident in practice" may be useful and entertaining to gynecologists, I have the honor to remain your obedient servant,

JAMES JAGER HILLARY,

M. C. P. & S., Ontario, late of Gov. Med.  
Service, Jamaica, W. I.

UXBRIDGE, ONTARIO,  
Sept. 10th, 1883.

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#### QUARTERLY REPORT ON THE PROGRESS OF GYNECOLOGY AND OBSTETRICS IN THE UNITED STATES.

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BY

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LITTLE need be said as introductory to a report of this kind. Its value is at first glance apparent. Such is, at the present day, the ardor with which the two sciences represented in this journal are pursued, so constant are the additions made to them, that it has become almost a necessity to the busy practitioner to have new facts presented to him in an easily assimilable shape, else lack of time may prevent him from becoming familiar with them at all. Especially is this true of the United States, which may fairly be called the birth-place of most that is modern in gynecology; at any rate, where the boundary line between physician and surgeon is not so clearly defined as in other countries—England, for example—whence it is necessary for every practitioner, more particularly in the country districts, to be prepared to act at a moment's notice either as physician or surgeon. Without further apology, therefore, I proceed to a condensed report of whatever has happened of interest in gynecology and obstetrics during the

past quarter, and it is my purpose to incorporate in these reports not only brief abstracts of new methods and descriptions of new instruments, but also critical notices of original articles.

It will not be amiss to preface a first report with an account of the hospitals in the United States where gynecology and obstetrics are prominent factors, as well as to briefly note the clinical advantages offered to students.

The City of New York, from her size and commercial importance, naturally claims first notice, as containing some of the largest hospitals and dispensaries, where many widely renowned men minister to the sick and impart their knowledge to those in search of it.

The Woman's Hospital of the State of New York was founded in 1855, by Dr. J. Marion Sims. It has now a capacity of over one hundred beds, and its service is conducted by Drs. Emmet, Thomas, Bozeman, Hunter, and Lee, with an able corps of assistant surgeons. The good work done by this institution needs no reference here. The operation for the repair of a lacerated cervix is indissolubly associated with the name of one of its surgeons, and recalls that of the originator of the duck-bill speculum—an invention which made trachelorrhaphy a possibility. The clinical advantages, from the students' standpoint, offered by this and other hospitals, will be best referred to when I come to speak of these advantages in particular.

The gynecological service at Bellevue was reorganized in 1882, and is now in charge of Drs. Lusk, Polk, and Wylie. At least one of these gentlemen utilizes his material for clinical bed-side instruction, as is noted further on.

Next in order of prominence should come the Mount Sinai Hospital. Its gynecological service—of twenty beds—was created some years ago, and Dr. Emil Noeggerath placed in charge. On this gentleman's resignation, Dr. Paul F. Mundé, the present gynecologist, succeeded to the position.

The gynecological patients at St. Francis' Hospital are under the care of Dr. W. R. Gillette, but, so far as I am aware, the material is not utilized for clinical instruction.

The Charity Hospital is situated on Blackwell's Island. It is under the control of the Department of Charities and Corrections, and has a small gynecological service under the management of Drs. Chamberlain and White.

At the Roosevelt Hospital the service for women is in charge of Dr. Robert Watts, but I do not think the material here, and the same applies to the Charity Hospital, is utilized for the instruction of students at the bedside.



The Long Island College Hospital, in Brooklyn, has an efficient gynecological service under the care of Dr. Alexander J. C. Skene.

So much for gynecology. In obstetrics, New York is sadly lacking. Her great and urgent need is a large maternity hospital within the city proper. As it is, the needy poor must either receive what care they can get at their own homes, or else resort to the small institutions I proceed to refer to. The first, the Maternity Hospital on Blackwell's Island, on the pavilion plan, has a capacity of forty-eight beds—obviously a ridiculously small number. The service here is supplied in rotation by Drs. Mundé, Garrigues, and Murray, with Drs. Barker, I. E. Taylor, and Gillette as consultants.

The Nursery and Child's Hospital and the Marion Street Lying-in, afford opportunities for a limited number of patients, but can in no way approach the great maternities of the Continent, which are alike monuments to man's beneficence, and sources of new and useful facts as well as of sound clinical instruction.

Finally, a small institution, near Bellevue, the name of which explains its purpose—the Emergency—is used for cases too urgent to permit of removal to the Maternity Hospital.

Of all these institutions devoted to obstetrics, only one, the Maternity (and that with difficulty), is available for purposes of instruction.

Other cities in the United States closely press New York for prominence in the departments I am speaking of. Boston has two excellent institutions—the Lying-in Hospital and the Free Hospital for Women. The former is under the care of Drs. Sinclair and W. L. Richardson; the latter is in charge of its founder, Dr. W. H. Baker. Both of these institutions are utilized as sources of instruction by the students connected with the Medical Department of Harvard University, and the evident usefulness of each is necessitating an enlarged capacity. The Boston City Hospital also has an admirable gynecological service ministered to by Drs. Lyman, Blake, and Doe. At the Carney Hospital Dr. Homans performs many of his ovariectomies; and, lastly, Dr. Jas. R. Chadwick has a private dispensary where he gives clinical instruction.

In Philadelphia, the Jefferson College Hospital and the Hospital of the University of Pennsylvania afford excellent opportunities for gynecological work. Drs. Goodell and Parvin are amongst those attached to these hospitals. This city, like New York and Boston, offers but limited opportunities on the side of

obstetrics, and, to avoid needless repetition, the same holds true of other cities in the United States.

So far as I am aware, clinical instruction in gynecology at the bedside, such as is given to practitioners and students in the three cities referred to, is offered nowhere else in the United States. I would lay special stress on the fact that I am not referring to clinical instruction in the amphitheatre, such as, it is to be supposed, is given in almost every medical school. If, however, I have omitted to mention any city where bedside instruction is given, I shall be happy to do it justice in a further report. And now, to proceed more particularly to the clinical educational advantages offered in this country.

Of late, the hasty and imperfect education given by most of the medical schools in the United States has attracted the attention of some advanced minds, and the result has been the creation of schools for post-graduate instruction, where the average tyro-graduate may at least learn something of clinical medicine, and where the country practitioner may resort for the purpose of refreshing his memory, and storing it with the latest useful facts. My description of these schools will be limited to New York, for the reason that the scope and purpose of those in other cities is nearly similar.

In New York, then, there are two institutions of the kind—the New York Polyclinic and the New York Post-Graduate School. The aim of these schools is, as I have already said, to give purely clinical instruction by means of dispensaries attached to them. This is accomplished by a subdivision of the students into small classes, whereby each may see or touch whatever is brought to his attention. In addition, the members of the Faculties are connected with various hospitals and dispensaries, to which the students have access to witness operations and perform minor ones themselves. For instance, at the Polyclinic, the services of three professors of gynecology and one of obstetrics are required. To name them: Prof. Mundé, who utilizes the Mt. Sinai for demonstration of operations; Prof. Wylie, who utilizes Bellevue; Prof. Hunter, who does the same at the Woman's Hospital, and Prof. Gillette, who instructs in clinical obstetrics at the Maternity and elsewhere. At the Post-Graduate are to be found Prof. Dawson, Assistant Surgeon at the Woman's Hospital; Prof. Alexander J. C. Skene, of the Long Island College Hospital; and Prof. Partridge, of the Nursery and Child's Hospital. While both of these institutions are yet in their infancy, the success of the past year augurs well for the future; and

numerous imitators have sprung up in other cities, all of which, I doubt not, have brilliant prospects in store for them.

After all, the above schools of clinical medicine are partially outgrowths from the need felt by practitioners for greater facilities for private instruction than our country offered. The private courses were insufficient in number, and yet in great demand. Amongst the first to give them in gynecology in this city was Dr. Paul F. Mundé, who, as early as 1875, when connected with the out-patient department of the Mt. Sinai Hospital, offered private courses to practitioners, and there are many physicians, both in this country and in Canada, who obtained from him those rudiments so essential to any sound practice of gynecology. On Dr. Mundé's connection with the Polyclinic, he ceased to give these courses; but to-day I may mention two gentlemen as still offering them in this city—Dr. Castle, at Bellevue, and Dr. Garrigues, at the German Dispensary.

The city of New York likewise leads the van as regards dispensary advantages. In saying this, nothing derogatory to other cities is intended. The fact is such, simply because there is necessity for more gratuitous treatment here, owing to the larger indigent class, many of whom, however, to their disgrace be it said, could well afford to pay a physician. The blame, perhaps, lies more in the system in vogue here and elsewhere than in the patients themselves; and the time will come when a radical change will be demanded by an over-worked and poorly-paid class—the physicians. Enough of digression, however. The majority of these dispensaries possess facilities for the treatment of the diseases of women. The material is vast, and whilst much goes to waste as far as clinical instruction is concerned, a great part is beginning to be utilized at the Polyclinic and the Post-Graduate School. Attached to the College of Physicians and Surgeons is a dispensary department, and from the class devoted to women Professor Thomas draws much of the material which illustrates his admirable clinical lectures. Other medical schools also possess their own dispensaries. Indeed, if the New York student does not learn, it is through his own fault, and not from lack of clinical advantages. In almost every city in this country, similar institutions exist, and I would single out simply two as being prominent educational factors—the out-patient department of the Massachusetts General Hospital and the Boston Dispensary.

In addition to the above-described hospitals and dispensaries which benefit both the patient and the student, certain specialists have opened private hospitals where women from the middle and



higher walks of life may receive treatment on the payment of a stipulated sum. Obviously, these hospitals are sources of large experience, and add to the material whence deductions as to treatment may be drawn. The most noted of these hospitals are those of Thomas and Emmet, in New York, of Goodell and Weir Mitchell, in Philadelphia—the last more especially for cases of neurasthenia. These private hospitals are not open to students.

And now, can the student find in the United States that proper instruction in these allied sciences, for which, not so many years ago, he had to resort to Europe? In gynecology, yes; in obstetrics, no. From a not inconsiderable experience with the chief hospitals of Europe, I feel justified in the statement that nowhere are there better clinical advantages for the study of the diseases of women than in the city of New York. This is largely due to the fact that many of the most marked advances in gynecic surgery have emanated from American minds, and partly due to the fact that methods of research and appliances for operation found necessary in this country are slow to obtain foothold in Europe. As for obstetrics, until some one of the large cities in this country possesses a maternity hospital modelled after the Dublin Rotunda or the Vienna Royal Maternity, it will be impossible for the student—and by student I mean the average graduate of a few years' standing—to obtain a thorough, exact, and comprehensive knowledge of labor from a clinical standpoint. Indeed, that a city like New York should not have a maternity hospital of large capacity, situated where it would be within convenient reach of both patients and medical attendants, is a disgrace to its municipality and a reflection on the philanthropy of its wealthy citizens.

It will be convenient and useful to divide my report into sections, the one devoted to obstetrics, the other to gynecology.

#### OBSTETRICS.

The subject of the proper management of abortion is of paramount interest and importance. Up to within a comparatively few years, it has been the almost universal routine practice to adopt the "expectant plan," in the management of the secundines; that is to say, to wait for nature to accomplish their expulsion unless urgent symptoms should arise. Recently (Feb., 1883), however, there have appeared in the columns of this JOURNAL two thoughtful and practical papers from the pens of Drs. Alloway and Mundé, advocating the immediate careful removal of the secundines in every case; for the reason, as shown by numerous cases, that the expectant plan subjects the woman to great risks,

such as hemorrhage, septicemia, metritis, cellulitis, peritonitis, subinvolution, and death; whilst, on the other hand, as again conclusively proven by the same statistics, the manual or instrumental delivery of the secundines is followed by no bad effects, if carefully performed. Such, I think, is a fair statement of the practice advocated by the gentlemen above referred to. As might have been foreseen, this advice meets with strenuous opposition, and the partisans of the opposed policy are rushing to the defence of the time-worn expectant practice, and are loud in condemnation of what they term hasty, ill-advised action. It is well that discussion has been evoked. Any advance in medicine will meet with opposition; but time and experience weigh all methods in the balance, ever deciding ultimately for what will redound to the benefit of humanity. Amongst the papers published in defence of the expectant plan, I will notice two. A third, which has also been quoted from, need not receive special notice.

Dr. Walter A. Colles read a paper before a recent meeting of the St. Louis Obstetrical and Gynecological Society, on the subject of the proper management of abortion. It is written in a temperate vein, and presents well the subject from the side of what I may term the "expectants." He characterizes the doctrine advocating immediate removal as being somewhat ultra and dangerous in its tendencies, and as being too dogmatic and sweeping in character; and, in addition, says that the papers of Alloway and Mundé are "lacking in fairness toward those who hold opposite views." Whilst, he continues, the act of abortion is a pathological process, yet, like most other processes, it is amenable to natural laws, "which, when properly guided and directed, generally lead to a favorable termination. Under such circumstances, nature often needs judicious assistance, but, according to my experience, it is seldom that her powers are so absolutely impotent as to require that they be unceremoniously ignored and supplanted by art." Dr. Colles then suggests the following as being the most rational treatment of abortion: If called to a case where all pain has ceased and hemorrhage as well, where the os is soft and patulous, and there is no indication of the presence of any foreign body within the uterus, the attendant need only give a dose of ergot, and, if at all in doubt, place a temporary tampon in the vagina. "The attendant would certainly not be justified in forcibly dilating the uterus, and scooping its interior, without first *waiting* for the development of some evidence of retained secundines." In this opinion of Dr. Colles I think every advocate of the immediate plan will agree, even Mundé and Alloway. Next, suppose the physician

be called to a case where evidently the secundines are retained. what does Colles advise? The first thing in order is to check the hemorrhage, and this is to be accomplished by a full dose of ergot. If the os be open, remove the placenta, either manually or with forceps; if, however, the os be too contracted to admit the finger, or the placenta be so obviously adherent as to permit only of fragmental extraction, it is better to leave it alone rather than resort to forcible extraction. The attendant should tampon. give ergot and opium. Usually, at the end of twelve hours, the secundines will be found, either in the vagina or presenting at the os. If, however, they cannot yet be removed without force, wash out the vagina, tampon as before, and wait, and so on ad infinitum, unless the pulse quickens, the temperature rises, the discharge becomes fetid, when, at last, the offending party is to be removed. Such, I think, is a fair statement of Colles' position. Another point he makes is, that very few of either Mundé's or Alloway's cases illustrate the *immediate* removal of the secundines, since the large majority were cases where the secundines had been retained for hours and days. I have no desire to champion either of the above gentlemen. They can take care of themselves. But it suggests itself to me, that if many of the cases do not illustrate the value of immediate removal, they certainly point out in the clearest possible manner the dangers to which the expectant plan subjected each patient, any one of which might have been obviated by the immediate removal. Indeed, the criticism called for by the expectant plan, as outlined above, is, that whilst the placenta or secundines remain in the uterus, the patient is in constant danger of, first, hemorrhage; second, septicemia; third (a remote consequence), subinvolution. The advice given is to wait till symptoms develop. This is very much like the homely simile of locking the stable door after the horse has been stolen. Many cases of sepsis are so swift in their onset that, before the physician knows it, his patient may be in the very jaws of death, and then the removal of the secundines may be too late to accomplish any good. In fact, the choice lies between doing at the outset what may ultimately be forced upon us, or else waiting for the danger signal to do what might just as easily have been done before. If the immediate removal of the secundines can be shown to be a safe procedure when carefully performed, it must, as far as I can see, supplant the expectant method, which, though hoary with age, must sooner or later be buried.

The discussion provoked by the reading of Dr. Colles' paper before the society referred to, disclosed a remarkable unanimity



in favor of his views. It strikes one that some of the speakers prefer the old simply from lack of familiarity with the new. Some of the gentlemen would limit their interference to washing out the uterus, as soon as the discharge becomes fetid, with, by the way, a solution of permanganate of potass, a first-rate deodorizer, but no disinfectant. Another gentleman stated that as soon as Dr. Colles' paper and the after-discussion had been read, the chief advocate of immediate removal would change his opinion and practice (!). Still another gentleman contended that there could be no septicemia as long as there was connection between the placenta and uterus. His reason for this assertion he did not give. It is sufficient for an answer to say, that adherent, "connected" placenta have been removed from patients suffering from septicemia; for it is only necessary to remember that a placenta may have apparent intimate connection with the uterus, and yet be detached at a portion, which single detached portion may become the starting-point of a violent septicemia.

The other paper I desire to refer to is the report of a case managed after the expectant plan and successfully, by Dr. Bailey, of Louisville. The essential point is that the doctor tamponed the vagina and waited for sixty-five hours, and then the placenta was found in the vagina. In the mean time there had been neither fetor nor rise of temperature. Dr. Bailey was fortunate in the issue of his case. Any one case, however, proves nothing; neither does it disprove anything. If I understand the position of the advocates of the immediate removal, they do not claim that the expectant plan will always be followed by ill; they simply claim that, seeing that in no one case is it possible to foretell the issue for good or for ill, it is better to substitute a method which experience has shown is apt to be followed by nothing but good.

Finally, both Drs. Colles and Bailey lay special stress on the use of the word "forcible" by Mundé. In a recent number of the *Boston Medical and Surgical Journal*, they will find a brief note from Dr. Mundé in which he answers one critic by referring him to his definition of the word "forcible" as plainly given on further pages of his paper.

An ever present problem to the accoucheur is how to save the perineum in any given case of labor. It is evident that no hard and fast rule can be laid down suitable to every case. The old precept, still unaccountably given in recent text-books, of supporting the perineum, obviously accomplishes nothing, for the reason that the perineum requires not support, but relaxation. Of the various ways of accomplishing this, evi-

dently the most rational and generally applicable is to assist the perineum to relax. Dr. Charles H. Carter (*Med. News*, July 21st), suggests a method familiar to many others, doubtless, but still worthy of wider recognition. The object proposed is to "tire out" the perineal muscles, particularly the spineter and levator ani, which offer the greatest obstacles to dilatation. That the perineum may escape laceration, it must retreat downwards and somewhat forwards. The accoucheur, then, before the head has descended to the perineum, should introduce two fingers into the vagina and one into the rectum and make steady traction in the above directions during each pain. The result is that on the descent of the head, it will meet a relaxed, dilatable, instead of a rigid perineum. Danger, hence, of rupture is reduced to a minimum, and the second stage of labor is considerably shortened, whilst the procedure in no wise adds to the patient's suffering.

Whilst on the subject of the management of the perineum, I would call attention to those cases where, when the head is resting upon it, further progress is checked from lack of extension. The Chinese, in their obstetric practice, give us a clue to an obvious way out of the difficulty, and Dr. Reichard (*Phil. Med. Times* for July), arrives at the same expedient from his personal experience. Of course the forceps could be readily applied, but that they are not necessary any one may satisfy himself by placing his patient on her hands and knees, when, usually, the head will extend, and delivery be accomplished as ordinarily. This expedient is also applicable to certain cases where the head refuses to engage, as is shown by a reported case.

In transverse impacted positions, where, from the very nature of the case, neither the forceps nor version is applicable, decapitation is indicated. This operation is not ordinarily a very difficult one, nor with the improved instruments at our command is it attended with much risk to the mother. Obviously this risk is lessened in proportion to the amount of manipulation necessary for severing the head from the trunk. The ordinary blunt hook when used alone is disadvantageous for the reason that many twists are necessary to effect decapitation; whilst the blunt hook followed by a cutting hook is open to the objection that extra manipulation is requisite. In neither of these methods, then, do we possess all that is desirable. Dr. Robert B. Dixon (*Boston Med. and Surg. Journ.*, September 27th) has combined the two hooks in one, and thus gives us what should always be aimed at, a complete instrument, and one which, it would seem, will simplify and hasten the performance of the operation. His instrument consists in the ordinary blunt hook with a thumb-screw in

its handle, the turning of which causes a sharp hook to project from the concavity of the blunt hook. Given the instrument in position then, break the neck by a sharp twist of the blunt hook, then turn the screw, when the sharp hook will project, and up-and-down traction will sever the muscular attachments. This instrument, we are assured by Dixon, is "very simple, easily cleaned, and not expensive." Certainly three great desiderata.

#### GYNECOLOGY.

The advantages accruing to the patient from an immediate repair of any extensive perineal laceration are to-day quite generally recognized. There are certain obscure degrees of laceration, however, which may have escaped the notice of most practitioners, and to these I would call attention here. Dr. Skene, of the Long Island College Hospital, in a recent clinical lecture (*New York Med. Journ.*, July 14th), after rehearsing the various degrees of laceration, lays stress on certain lesions which have not received the attention they deserve in current literature. In the first place, the separation of the perineal muscles at their junction in the median line, without an accompanying laceration of the vaginal mucous membrane or the integument of the perineum. Externally there is no evidence of the lesion. On examination with the finger or speculum, however, the deeper perineal structures are found to be absent. The effect of this separation of the muscles is precisely the same as though there were complete laceration. (In justice to Dr. M. A. Pallen, it should be said here that this very lesion was described by him in a paper read before the Academy of Medicine some years ago, in which he gave the name of "sundering" to this separation of the muscles.) As an explanation of this lesion, Skene suggests that the elasticity of the muscular structures is probably less than that of the integument, whence the former yields more readily. A due appreciation of this lesion is obviously of great importance. As to its treatment, provided the case be recent, and the muscles have not atrophied, it will be sound practice to divide the mucous membrane and integument, and then perform the ordinary operation for restoration of the perineum.

Another lesion, rarer than the preceding, consists in an atrophy of the perineal muscles, including the levator ani. A typical case of the kind is related, where, though the distance from the posterior vulvar commissure was normal, on grasping the perineum absolutely no muscular substance could be detected. In other words, all the muscles of the pelvic floor had atrophied. It is probable that such cases at some time suffered a separation of the



muscles, which, from long disuse, underwent fatty degeneration. Such an explanation will account for the perineal muscles; as for the levator ani, it may have been congenitally absent, or else the loss of the other muscles imposed unusual strain on the levator and it atrophied. As for treatment, if the lesion be detected early, perineorrhaphy is indicated; later, after complete atrophy, nothing can be done.

Both of the above-described lesions are certainly easy of detection, and, it seems to me, cannot escape notice if the good rule be followed of examining every parous woman as soon as possible after involution is completed; or, rather, since the presence of most lacerations has a tendency to produce subinvolution, at least eight weeks after labor.

In a report on progress, any operation proposed by T. Addis Emmet claims reference. At the recent meeting of the Gynecological Society at Philadelphia, he described a new method of repairing a laceration of the perineum. An abstract of his method having already appeared in this JOURNAL (October number), I will simply here recapitulate Dr. Emmet's views, and outline the substitute he offers for the well-known method he gave to the world in his treatise on Gynecology. His present belief is that it is not so much the perineal muscles as the perineal fascia which are the essential factors in support. As long as this fascia is intact, the posterior vaginal wall is kept in contact with the anterior, and the new operation he has devised effects this better than any other. The perineal body, as represented in illustrations, is a myth. It may be, hence, neglected in any operation, as indeed may all the parts outside of the line of the hymen. The main object of his new operation is to bring a portion of the posterior vaginal wall at the entrance together, and for his method of effecting this I must refer all interested—and every one should be—to the abstract already published.

The operation originally proposed by Battey received at the outset the name of "normal ovariectomy," a term which has rightly fallen into disuse, but which served at the time to define the originator's meaning, a meaning which to-day has clearly altered. The operation is no longer limited to the removal of healthy ovaries for the purpose of bringing about the menopause; indeed, very few ovaries, after removal, have been found to be healthy. Oöphorectomy is still clearly on trial: and it is questionable if the premature publication of cases will help towards its acceptance—premature, I mean, in the sense that sufficient time has not as yet elapsed for the noting of good or bad results. And yet Battey himself (*Virg. Med. Monthly*, August)

reports a consecutive series of ovariectomies, eighteen in number, all successful. Let us see in how far he is justified in applying the term "success" to the "Battey" cases, eleven in number. To take any case, I find one in which the operation was performed for oöphoralgia and great nervous disturbance. Here, whilst the menopause has been complete, her neuralgias still trouble her, though in less degree. The explanation given is that the patient is addicted to the opium habit. Such an explanation is purely hypothetical. What the world wants is facts, not surmises. In another case, requiring operation for the same reasons, after twelve months we are told that she is greatly improved, but is not entirely well yet. In a further case, after three months the patient still menstruated and "the time is too short to indicate final results." And in still another "the patient returned home comfortable on the thirtieth day." In only one case, indeed, was the cure complete, and she still menstruated. Obviously, from all this, it is apparent that greater confidence in the operation would be felt if less general and more distinct gain could be shown to redound from it in these cases.

Another point I would note is that, where the tubes were found to be diseased, they were removed as well as the ovaries. Thus, then, the boundary line between Tait's and Battey's operation is no very broad one.

All of Dr. Battey's cases were performed under strict antiseptic precautions. He uses the spray, because, while the successes of others without it proves that it is not essential, its use will probably nullify any carelessness in the details of cleansing.

Dr. H. C. Coe (*New York Med. Jour.*, Sept. 21st) gives a summary of four cases of sarcoma of the uterus. Such cases are generally ranked as rarities. Emmet has seen but seven; Thomas, however, suggests that the disease may be less rare than is ordinarily supposed, many cases being classed as cancerous or fibrous. In Coe's cases the microscope revealed the presence of small and large round sarcomatous elements; and he lays stress on the necessity of the exercise of great care before making the diagnosis of sarcoma, since, among other things, an endometritis fungosa may present closely-related characteristics.

The number of ovariectomies reported during the past quarter is small, but then most surgeons operate by preference at other seasons than the summer. Of those reported, certain ones offer interesting features, to which I would call attention here. Dr. Matthew D. Mann, of Buffalo, has reported a series of twelve, of which number three died. In connection with the fatal cases, Mann calls renewed attention to the unfitness of a general hospi-

tal for any operation involving abdominal section. One of his fatal cases was almost moribund when the operation was undertaken; the two others, however, presented no operative difficulties, and did well for some days, only to succumb finally to sepsis, attributed to hospitalism. Other gentlemen besides Mann have had this same experience; and it suggests itself that one reason why American success in ovariectomy is generally less marked than English is because in this country the surgeon is too often obliged to operate in a general hospital. Mann's practice is to use the spray of boro-glyceride (1-20); for the instruments and hands he uses carbolic; and as a dressing, boro-glycerated cotton.

The same gentleman reports (*N. Y. Med. Journ.*, July 7th) a case of removal of the uterus and its adnexa on account of solid tumors of the ovaries and fibroid polypus of the uterus. The case exemplifies, among other things, the value of the microscope as an aid to the diagnosis of tumors before their removal, and without the necessity of an exploratory operation. In this case an operation would probably not have been performed had not the microscopic examination of the fluid, from the presence of the so-called Drysdale corpuscle, rendered it probable that the tumors were partially cystic. Both Mann and Drysdale made the diagnosis independently; the operation was performed, and with success. The stump of the uterus did not bleed at all, because, perhaps, the thermo-cautery was used; and Mann asks, "May not this be taken as a point in treating the pedicle in hysterectomy?"—that is to say, treat the pedicle by the cautery, rather than by the extraperitoneal method.

Whilst on this subject of tumors of the ovaries, I would simply refer to a case reported by Walter Izard, of Lynchburg, Va. (*Med. News*, Aug. 18th). It concerns the removal of a large solid fibro-cystoma of the ovary, with fatal result. As Izard remarks: "If the nature of this tumor could have been made out before operating, the operation would not have been performed. . . . The patient was not tapped or aspirated, a measure that would have pointed out the true nature of the tumor, in obedience to the opinion held generally, I believe, by ovariectomists, that this measure is not advisable in cases where an operation is contemplated, and where the other signs of an ovarian cyst are sufficiently clear as to leave no reasonable doubt as to the nature of the tumor." And yet, looking at the case generally, and comparing it with Mann's, it is consistent to think that the microscope might have assisted in this case of Izard's, even as it did in Mann's, though, of course, in the reverse. At any rate, it seems better practice to tap when in doubt rather than subject a patient



to the risks of a major operation when the diagnosis is uncertain.

As a great rarity in the human female, I would notice a case of cyst of Gärtner's canal, reported by Stanley P. Warren, of Portland. This canal, it will be remembered, is an offshoot from a portion of the Wolffian bodies, and is so named after its discoverer, Herman T. Gärtner, of the Island of St. Thomas. These canals exist normally in the cow, running parallel to the vagina, and having their openings each side of the meatus urinarius. In the human female, these fetal structures usually become obliterated; at times, however, they persist, and one or both may become encysted. In Warren's case, the cyst presented the appearance of a cystocele, and indeed had been so diagnosticated. The sound in the bladder, however, made the differential diagnosis. The cyst was of the size of a hen's egg, in the median line, behind the meatus urethræ. Dr. Gordon, of Portland, opened it, applied phenol to its cavity, after he had found it impossible to dissect it out.

A case somewhat similar to this one was reported to the New York Obstetrical Society, in 1881, by Dr. Robert Watts.

The value of the salts of manganese in certain cases of amenorrhea was first brought to the notice of the profession by Sidney Ringer. They have since been tested by various gentlemen, and one of them, Dr. F. H. Martin, of Chicago, reports (*Med. Record*, Sept. 29th) the results from their use. He has used the permanganate of potass, and explains its action on the assumption that it restores tone to the uterus and appendages. His reported cases were so successful as to justify a more extended recourse to the remedy. In his hands, too, its action has not been limited to amenorrhea, but proved of utility in cases of meno- and metrorrhagia. In its use, it is well to remember that the drug is incompatible with almost everything, and therefore can only be given in capsules, or in a watery solution containing about two grains in each dose, to be taken on a full stomach, three times daily.

Drs. J. Ewing Mears and Longstreth have recently performed some interesting experiments, with the end in view of noting the changes which take place in the pedicle of an ovarian tumor treated by the intraperitoneal method. They used for their experiments rabbits, and tied the pedicle either with catgut, linen thread, or silk. The deduced conclusions (*Med. News*, Oct. 6th) are that this method of treating the pedicle is perfectly safe, seeing that nature takes care of both the stump and ligature. In the first experiment, the animal was killed at the end of two weeks; the ligatures were completely incapsuled, and there was ab-

solutely no evidence of peritoneal inflammation. In the second, it was found that cells had wandered between the meshes of the ligature, and that it was in process of disintegration. This was at the end of four weeks. A practical point brought out by these experiments is that, in constriction of the pedicle, the object aimed at should simply be to control the passage of blood through the vessels, not to interfere with the so-called interstitial circulation.

Experiments such as these are obviously of value, and the publication of further results is to be awaited with interest, particularly at this time when the opinion of the leading surgeons is gradually becoming settled as to the great superiority of the intraperitoneal over other methods of treating the pedicle.

Dr. W. T. Howard, in his report of the Section on Obstetrics and Gynecology (Trans. Med. and Chirurg. Faculty of Maryland, 1883), gives a history of trachelorrhaphy, and answers the objections raised against it by Tilt, Savage, and others—objections clearly founded on ignorance of the lesion, misconception of the object of the operation, misrepresentation (wilful or otherwise) of the writings of Sims, Emmet, Thomas, etc. It is strange that, at this late date, it should be necessary to defend an operation of such incalculable value; but the defence, as it appears in these transactions, will have served a useful purpose, if, once for all, it silences puerile and ill-founded objections; and if Dr. Howard's words do not, certainly words never can. There is no uncertain ring to them. The indications for the operation are here clearly formulated, and once more is attention called to the fact that the lesion may be often prevented by resort to proper prophylactic measures during labor. In concluding this portion of his report, Howard pays a well-merited compliment to Playfair in saying, "American gynecologists are becoming quite hopeful of their English *confrères*, now that Dr. Playfair has taken them in hand. He clearly looks at trachelorrhaphy in the same light it shines into American eyes; and if his colleagues will not see the truth, it is certain that their patients will, when they compare notes with their sisters under Dr. Playfair's care."

The next subject Howard considers is vesico-vaginal and utero-vesico-vaginal fistulæ, with the purpose of showing that they also may be prevented by proper care during labor, or made to heal without resort to surgery by proper treatment after delivery. He proves his points by the relation of several interesting cases, well-worth perusal. The main point in treatment is to keep the parts thoroughly cleansed by carbolized douches, and to secure free drainage of the bladder through a properly-shaped self-retaining catheter.

The last article in the report is an exposé of the value of M. Tarnier's axis-traction forceps over the ordinary ones. Howard is firmly convinced of their superiority, and Tarnier finds in him not only a partisan, but also a defence against those who would detract from his claim to originality. The worth of these forceps is in this article clearly shown, the objections raised against them ably answered; still, doubtless, many accoucheurs will remain faithful to the ordinary forceps which have served them in good stead, if for no other reason than because, however valuable Tarnier's forceps may be, there is still ample room for honest difference of opinion as to their superiority over, just as it is clearly evident that they are far more complex than, the ordinary forceps.

Dr. Edward G. Loring, in an able article (*Trans. Am. Ophthal. Society*, 1883), calls attention to a by no means sufficiently recognized fact—that pregnancy may be the cause of permanent blindness, and he advocates the interruption of the pregnancy in cases where, during one or more pregnancies, there has been deterioration of vision. He claims also, and the cases he cites justify his claim, that, in those cases where there is sudden loss of sight, partial or entire, during the course of gestation, the prognosis as regards complete restoration of vision becomes the more favorable the earlier the cause of deterioration of vision be removed. It has been noted that, where during the gravid state there appears a tendency towards loss of vision, this tendency is simply increased by each recurring pregnancy, and, therefore, the induction of premature labor at the very first disturbance would seem not only justifiable, but a duty. It would take too much space for me to follow Loring in his interesting argument. My object is simply to call attention to his paper, wherein he certainly proves his point. His closing deductions may be stated as that the induction of abortion in such cases is fully justified, not only from a moral, but also from a legal standpoint; and that the examination of the eyes of pregnant women should become far more a matter of routine, even though the patient does not complain of visual disturbance, seeing that "thirty-three per cent of those who have an organic lesion of the retina or optic nerve from kidney trouble either have none or make no complaint of any reduction of vision."

By my next report, the winter's work at the hospitals will have fairly begun, and I hope, hence, to be able to make it more clinical by incorporating brief notes of important as well as of new operations.

NEW YORK, October, 1883.



TRANSACTIONS OF THE OBSTETRICAL  
SOCIETY OF NEW YORK.

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Meeting, May 1st, 1883.

## TENACULUM SCISSORS FOR TRACHELORRHAPHY.

DR. B. F. DAWSON presented a pair of scissors with tenacular points for operations upon the lacerated cervix uteri. He had used them with satisfaction. The ordinary scissors often failed to take a satisfactory hold of the hard cicatricial tissue which existed in many cases.

## WIRE-TWISTER.

DR. DAWSON also presented a wire-twister with a sliding sheath upon the two blades, and claimed for it the advantage that it never slipped from its grasp upon the wire, and was simple in principle.

DR. LEE said that he had used the scissors presented by Dr. Dawson in one case, and they fulfilled the purpose perfectly. Care should be taken not to seize the tissue higher than it was desired to make the incision with the expectation that they would slip and fail to cut deep enough, like the ordinary scissors; they cut exactly where they were applied. With regard to the wire-twister, the advantage claimed for it, he thought, belonged equally to Sims' if properly used.

STRANGULATION OF AN OVARIAN CYST; RAPID DECOMPOSITION OF  
THE CONTENTS.

DR. DAWSON said that about five months ago a woman, thirty-six years of age, the mother of three children, consulted him with regard to an enlargement of the abdomen, which he found to be due to a cyst of the right ovary, and which was causing her considerable suffering. For purposes of confirming the diagnosis, he inserted a hypodermic needle, and withdrew a slightly turbid fluid. The specimen sent to the microscopist for examination was lost. A few weeks afterward the hypodermic needle was introduced a second time, and fluid was withdrawn which was of a darker color than that withdrawn on the former occasion. The microscopist, Dr. Satterthwaite, said that it contained pus and blood. The patient was feeling better than before, and the tumor, she thought, seemed to be even smaller in size. Dr. Dawson, feeling that decomposition was taking place, directed her to return again within a short time, which she did, and the fluid withdrawn by the syringe was now found to be as dark as *café au lait*. Believing that the patient could not pass through the summer without relief, it was decided to operate immediately while the weather was cool, and she was admitted into the Woman's Hospital, and operated upon April 13th. The tumor was found to have pretty

extensive and apparently recent attachments to the omentum and other abdominal organs. It was a polycyst, with thick walls, almost of a gangrenous color, and with chocolate-colored contents, about two quarts in quantity. It was found that the pedicle had become twisted, and this had cut off the circulation to such an extent that decomposition was taking place. The specimen was examined by Dr. Coe, of the hospital, who reported that the cyst showed commencing fatty degeneration and necrosis of the inner wall. The fluid contents contained Drysdale's corpuscle, and a large amount of pus and blood. The corresponding tube, which was removed with the ovary, it was remarked, showed cilia in motion for some hours, a point simply of physiological interest. The right ovary was also diseased, and, with the tube, was removed. Both pedicles were ligated and cauterized. The patient was convalescent.

#### COCCYGECTOMY.

DR. DAWSON also presented the bones of the coccyx removed from a woman, twenty-one years of age, who had suffered for four years very severely from general pelvic and uterine pains, for which she had undergone treatment by various physicians without benefit. Dr. Dawson found retroversion of the uterus, for which he employed treatment, but, as no relief followed, and it was found that the pain was referred almost exclusively to the region of the coccyx, which was movable and had sustained an injury from a fall three or four years before, it was decided to perform coccygectomy. The patient had been doing exceedingly well since the operation a week ago. Dr. Dawson remarked that the operation for removal of an ordinary ovarian cyst was less tedious and troublesome than that for removal of the coccyx.

DR. GARRIGUES said it was a somewhat hazardous procedure to introduce the hypodermic needle into an ovarian cyst, especially when the contents were known to be undergoing degeneration, and withdraw only a small amount of the fluid, and it ought to be done with antiseptic precautions.

He had shown, in his book on the "Diagnosis of Ovarian Cysts by Means of their Contents," that, if the cyst were tapped at all, it was safer to introduce the larger instrument and withdraw the whole of the contents, in order that the danger of after-escape of fluid into the peritoneal cavity and consequent inflammation might be avoided. Even when the smallest needle was introduced, and the cyst was not completely emptied, there was danger of some fluid escaping through the puncture and setting up peritonitis; whereas, if all the fluid were withdrawn, the puncture which had been made would heal perfectly before there could be a sufficient reaccumulation to distend the sac and escape by the opening. It was well known that a number of deaths had resulted from tapping ovarian cysts, and not removing the entire contents. Dr. Drysdale, however, had made it a rule always to empty the cyst entirely upon tapping it; and probably he, working together with the late Dr. W. L. Atlee, had performed the operation oftener than any other surgeon, and had never had a fatal result. With regard to the movement of cilia in the Fallopian tube for some

time, he once examined an ovarian cyst removed by Dr. Bozeman, in which the fluid was perfectly clear, and ciliary epithelium lined its inner walls, and in that case the cilia were found in motion at least six hours after the operation.

Dr. LEE said that Dr. Hanks had had a case which went to confirm Dr. Garrigues' statement with regard to the harmlessness of the large trocar when the entire fluid contents of cysts were withdrawn.

Dr. H. T. HANKS said that the case to which Dr. Lee referred was one which he first saw about seven years ago. The patient had at first a polycyst, which had been tapped twice before he saw her. Since that time, he himself had tapped the tumor ten times, with an aspirating needle, three times, early in his attendance on her, and, of late, with a large trocar. Even with this instrument, since several cysts were now present, and the contents had become so thick in some of these it was impossible to withdraw all the fluid, it had become necessary to make a number of punctures, and to pass the instrument, after its insertion, in different directions, so as to reach the separate cysts. The patient was now seventy-eight years of age, and it was evident that the end was near.

Dr. J. B. HUNTER remarked that he had had a similar case in a woman, sixty-eight years of age, who evidently had an ovarian cyst, which, during the past four years, he had tapped a number of times, withdrawing all the contents, and it had been tapped before he saw her.

Dr. H. D. NICOLL said it was not uncommon for patients with ovarian cysts to come to the Woman's Hospital with the history that the tumor had been tapped several times without any bad result.

Dr. LEE said that in England the operation of tapping the cyst for diagnostic purposes was considered so serious that it was not undertaken without the surgeon being prepared to remove the tumor entire, if necessary, immediately afterward.

#### TAIT'S OPERATION.

Dr. NICOLL presented the ovaries and tubes removed from a woman, thirty years of age. She had suffered from pain in the region of the ovary during her entire menstrual life, and had, of late, become greatly reduced in health; all of the vital organs performed their functions in an unsatisfactory manner. The operation was done by Dr. Thomas, this afternoon. Both ovaries were cystic, and the right Fallopian tube was much distended by liquid.

Dr. LEE said that, at a recent meeting of the Society, the opinion had been expressed that Tait's operation should not be resorted to in cases in which no symptoms existed except those of a subjective nature, such as neuralgia of the ovaries; that it should not be done unless positive evidence of disease of the ovaries and tubes could be discovered by physical examination. This, he believed, limited the field of the operation too much, and in support of this belief the following case was narrated, and the specimens were presented: A German woman, twenty years of age, single, entered his service in the Woman's Hospital, three years ago, suffering from symptoms of chronic cellulitis and pelvic peritonitis. She was anæmic, feeble, and somewhat hysterical, and her general health was greatly impaired. The slightest pressure over the pelvis and uterus caused pain. This was due, in part, probably to some degree of cys-



titis. She remained in the hospital about four months, undergoing the usual treatment for pelvic cellulitis; but, not being allowed to use opium to relieve pain, she became discontented and went out and sought employment. In consequence of being unable to work, however, she lost one position after another, and returned to the hospital, about a year ago. Dr. Lee had seen her from time to time, but all the treatment employed proved ineffectual. She was turned over to the out-door department, and Dr. Dawson was equally unable to give relief. Last winter, they separately reached the conclusion that the only hope of relief consisted in Tait's operation, as it seemed evident that the ovaries were at fault, although this could not be demonstrated by physical examination. The patient willingly submitted to the operation, which was performed about three weeks ago. Both ovaries were found to contain numerous small cysts, and the tubes were thickened and inflamed. The temperature rose for one day to 101° F., but had since become normal. The operation was done without difficulty. In this connection, he stated that the patient reported to the Society, upon whom he performed this operation four months ago, who was then completely helpless, had since had perfect health, and was doing her regular housework. Besides these two cases, there were three others in which he had done the operation, in each of which benefit had resulted, although in three out of the five cases a sufficient length of time had not elapsed to determine as to the permanence of the result.

DR. HUNTER thought that the propriety of the operation was evident in the case reported by Dr. Lee, and that the operation was called for in some cases in which an absolute diagnosis could not be made:

#### PROLONGED GESTATION.

DR. WM. M. CHAMBERLAIN reported further with regard to a case of prolonged gestation narrated at a recent meeting of the Society. The patient was delivered on the 303d day after the close of her last menstrual period—one day less than ten calendar months, five days less than eleven lunar months; labor was very short and easy. The child was a female, weighing about eight pounds.

DR. NICOLL was once detained in the city, during the summer, for about six weeks, by a patient who was delivered on the 322d day after her last menstrual period, and who had had but a single connection, which took place on the fifteenth day after said menstrual period. The duration of pregnancy, therefore, had been 307 days. The child was puny and blind, but otherwise normal. It lived only a few months.

DR. GARRIGUES thought that the possibility of pregnancy continuing for a considerable period beyond what was usual had been pretty conclusively settled, both by observation of reliable persons and also by analogy drawn from the lower animals. Physicians could not accept the maximum duration of pregnancy as established by the laws of a country as having any scientific value except as going to show that at all times exceptional cases had occurred in which pregnancy had been prolonged beyond the usual period.

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*Meeting, May 15th, 1883.*

#### TAIT'S OPERATION.

DR. B. F. DAWSON related the following case, and presented the

specimen, consisting of the left Fallopian tube distended to the size of an egg, and inclosed with the ovary in firm false membrane. The ovary was atrophied from the pressure and constriction. About a month ago, he was requested by Dr. Mary Jones, of Brooklyn, to see a patient, thirty-two years of age, married twice, but never pregnant, who during her married life had suffered from severe dysmenorrhea. During the past three years, she had suffered from pelvic neuralgia almost continuously, referred more especially to the region of the left ovary. Her suffering had compelled her to resort to opium in large quantity; she had become very delicate, and her general health was greatly reduced. An examination revealed great tenderness in the entire pelvis, exaggerated on the left side, where a small adherent tumor was discovered, evidently an ovarian cyst or a hydro-salpinx. An operation was plainly indicated, and was advised by Dr. Dawson and desired by the patient. It was performed yesterday, May 14th, by Dr. Jones, Dr. Dawson assisting. He found the adhesion firmer than in any case in which he had operated, and it was with the greatest difficulty that he was able to remove the ovary with its tube, the seat of hydro-salpinx. The operation having been necessarily tedious, and the patient's condition being low, it was not considered advisable to attempt to remove the right tube and ovary, which were apparently normal, but bound down even more firmly than the left had been. Moreover, the patient had referred her symptoms principally to the left side. Dr. Dawson thought that the pain, which was aggravated at the menstrual period, was intensified by the unyielding nature of the dense adhesions enveloping the distended tube and ovary. The patient gave a history of pelvic peritonitis, five years previously, from which time her symptoms dated.

DR. F. P. FOSTER asked, relating to the fear expressed by Dr. Dawson that fluid from the hydro-salpinx might have escaped into the peritoneal cavity, what amount of danger would attend such an accident.

DR. DAWSON thought probably the same amount of danger that would attend the escape of fluid from a simple ovarian cyst.

DR. LEE said that the question asked by Dr. Foster had been answered practically in the cases reported by Tait and Hegar, where fluid from a hydro-salpinx had accidentally escaped into the peritoneal cavity and had not been followed by any bad results. Another practical question suggested by the case narrated by Dr. Dawson was as to whether an intelligent opinion could be formed from the history of a case with regard to the extent of the adhesions that might exist. It was doubtful whether, if the other ovary was diseased in the case related, the patient would be relieved of her symptoms.

DR. FOSTER remarked that the question which he had asked had been suggested by the thought as to the possible advantage of puncturing the hydro-salpinx when removal of the organs was not practicable.

DR. DAWSON thought it was a good rule in abdominal surgery to

avoid emptying any fluid from any growth into the abdominal cavity, if it were possible to do so.

DR. LEE thought that the immunity from dangerous symptoms which had been observed in many cases where the proposed operation had been abandoned after opening the abdominal cavity gave grounds for the belief that as much progress would be made in explorative abdominal surgery during the next ten years as had been made, for instance, with regard to the operation of ovariectomy during the past ten years. He himself had witnessed five cases during the past winter in which an operation involving laparotomy had been abandoned, for one reason or another, after the abdominal incision had been made and the contents of the cavity had been explored. And in every instance the patient recovered.

DR. J. G. PERRY thought it might prove an important diagnostic point, in the class of cases referred to by Dr. Dawson, to know the exact period at which the pain began—whether before, during, or after the flow.

DR. DAWSON said that in the case reported the pain was continuously so severe that it would be difficult to reply to the question.

DR. J. R. GOFFE, present by invitation, said that Dr. Hunter, in performing Tait's operation upon a patient at the Woman's Hospital, last winter, found, after removing the ovary and tube upon the side where pain had been most complained of, that the other ovary was so adherent he would not take the risk of removing it. The case was one of hydro-salpinx, from which the patient had been a great sufferer. She remained in the hospital five weeks after the operation, during which time there was complete immunity from pelvic pain. It was now just three months since the operation, and Dr. Goffe was informed by Dr. Hunter that a perfect cure had resulted.

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## TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF PHILADELPHIA.

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*Stated Meeting, Thursday, September 6th, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. WM. T. TAYLOR read the report of a case of

### FACE PRESENTATION WITH ECLAMPSIA.

Face presentations are somewhat rare. Dr. Churchill some years ago, in recording the statistics, found that in British practice they occurred once in 292 cases; in French practice, once in 275; and in German practice, once in 130 cases. In my own practice, I have met with about one dozen, and as the last one was combined with eclampsia, I will report it to the Society.

During utero-gestation my patient enjoyed very good health, having no headache, no swollen limbs nor bloated features, no vertigo nor dimness of vision. There was no deficiency of urine, and



therefore I did not examine it for albumen. Her appetite was fair, her bowels regular, and she took a moderate degree of exercise, so that I had no reason to expect any trouble when labor began.

On May 14th, 1883, I was summoned, at 6 A.M., to visit Mrs. C. Haley, aged twenty-three years, primipara, who was in the first stage of labor; having having had a show since midnight. On examination, I found the os very slightly dilated with the pains "few and far between," and the face of the child presenting, with the chin toward the sacrum. The nurse informed me that the patient had not slept during the night and was very nervous and irritable. Her skin was moist, her pulse normal, and she had urinated frequently.

I gave her a mixture containing hydrate of chloral, bromide of potassium and valerianate of ammonia to compose her, and went home for my breakfast, intending to return in a few hours.

At 8 o'clock the husband came to my office and told me that his wife had "had a fit and could not keep the medicine down." I arrived at the house at 8:30 A.M., and sent immediately for some powdered hydrate of chloral and an injection apparatus. The patient had had two convulsions which were ushered by complainings of her head, her face being very red, and her head drawn to one side with the features much distorted. The first convulsion occurred when the nurse was about to give the first dose of the medicine. Directly after my arrival a third convulsion occurred and lasted for a minute or more, her head being violently drawn to the right side, with jerking of her arms and legs.

I dissolved one drachm of the hydrate of chloral in about four ounces of water, and threw it into the rectum. The fit yielded immediately. As she was unconscious, I had an excellent opportunity of examining her. The os was dilated to the size of a quarter dollar, and soft so that it yielded gradually to the pressure of my fingers, when I discovered the face presentation with the chin toward the left sacro-iliac junction. I endeavored to push the chin toward the breast so as to bring down the occiput in the second position of Baudelocque. This I found somewhat difficult, but as the os dilated under the pressure of my fingers, I reached the occiput, and after several attempts succeeded in bringing it down to a favorable position, the one aforesaid. My patient by this time was becoming restless and uncontrollable, and fearing another convulsion, I again gave her an injection of chloral which quieted her. Having placed her on her back and brought her to the edge of the bed, her limbs being supported by the nurse and a neighbor woman, the forceps were easily applied and the head brought down below the inferior strait. I removed the instruments when the head pressed against the perineum, allowing nature to finish the delivery. The child, a boy, was still, the cord being pulseless. In fact I was apprised of this whilst endeavoring to dilate the os with my fingers, for a significant tremor had passed through the body of the child, assuring me of its death. The placenta was removed quite easily.

During all this time my patient was unconscious, and had no return of convulsion from the time I gave her the first injection of chloral.

As her pulse was good and her respiration easy, I applied a binder, and having placed her in a comfortable position, left her sleeping. On my return at 5 P.M., she was restless and slightly feverish, but after taking a few doses of chloral and valerian, she was quieted to sleep. On the next morning, May 15th, she was perfectly conscious, pulse 80, temperature 99°, and respiration normal. She had urinated freely, and with the exception of some slight soreness over the abdomen, was very comfortable. She inquired for the babe, knowing from her condition that it had been born, but the preceding twenty-four hours were, to her, a perfect blank. From this time she had no further trouble, and soon recovered. This case certainly showed the beneficial effect of injections of hydrate of chloral in controlling puerperal convulsions where they are of a nervous form.

DR. ALBERT H. SMITH remarked that face presentations and puerperal convulsions presented a large field for discussion. Dr. Taylor was very fortunate to be able to bring down the occiput and keep it so until the forceps could be applied. In this operation a man needs three hands, one to hold the head while the others manipulate the instrument. The mechanism of a primary face presentation, as reported in this case, is difficult to understand. It may occur secondarily from obliquity of the uterus and a sudden free gush of waters, causing a sudden engagement of the head before flexion could be secured. In such cases it is very difficult to secure and maintain flexion until the forceps can be applied. In the majority of cases of face presentation, even with the chin posterior, nature is best able to terminate the case satisfactorily. It is to this class that the aphorism "meddlesome midwifery is bad" is most applicable. The natural forces work slowly, and the neck of the child becomes accustomed to the extreme extension which it has to undergo; while it is very bad to bring, by means of the forceps or otherwise, a sudden strain on the vertebræ and other tissues of the neck by too rapid forcing of the chin into violent extension. The consequence of the hasty proceeding is a still-born child. The only ground for interference is an alarming condition of the child's pulse. If the child's heart is beginning to fail, we must take the risk and give it the benefit of the chance. The child's head cannot be born in face presentation until the chin has engaged under the pubis. The old teaching was that the chin posterior could not be born, but he was very early undeceived on this point, one of his earliest cases having been of this character. He had sent for his preceptor to come and bring perforating instruments, but while awaiting their arrival, nature proved equal to the task, rotation occurred spontaneously, and a living child was born.

DR. B. F. BAER inquired if version by the feet would not be much preferable to waiting for nature to deliver in chin posterior positions.

DR. SMITH did not mean that we should never interfere in a case of this kind, but that a large majority, if left to nature, would terminate spontaneously by anterior rotation of the chin, with safety to both mother and child. He would decidedly negative the propo-

sition of version by the feet, because the amniotic sac having been necessarily ruptured by previous efforts to bring down the vertex, the waters would have been completely *evacuated*, the uterus would be in a condition of *spasmodic* contraction, and an attempt to turn would involve great danger of rupture of the uterus. The introduction of the hand always increases the risk of septic absorption, two terrible risks against the mother, while the child is exposed to all the dangers of head-last delivery. He should consider chin posterior presentations, natural labors, and should allow them to terminate spontaneously unless there was some complication demanding version.

DR. J. G. ALLEN coincided with Dr. Smith in his conservative principles. The risks of version to the mother are great, too great to allow it to be performed for the sake of the child. The operation of version is not looked upon in as serious a light as it should be under all circumstances. In some instances it may be very easy, and may terminate well; but in others, apparently similar in conditions, the results to the mothers are bad. He would not lose one mother to save ten children. He would never resort to version unless the labor was impossible under other measures. Even after it is skilfully performed, the child is often still. The increased risk to the mother is followed by no corresponding gain in safety to the child.

DR. R. P. HARRIS thinks the ideas of Dr. Smith are the same as held by most eminent obstetricians, and agrees with their practice as expressed to him in private correspondence.

DR. BAER was willing to be taught. The views expressed this evening did not harmonize with the teaching of even the present day in Philadelphia. He had been taught that version would be proper if the case was diagnosed early and the operation could be performed before the waters were evacuated, and it seemed to him that the rational thing under such circumstances would be to turn. It was entirely a new light to him to consider chin posterior cases as easy natural labors. He had been taught to look upon them as impossible, and that rotation never took place, the forces in action not being great enough to compel it. His own recent experience had led him to doubt this dictum; with one blade of the forceps used as a vectis he had, without difficulty, secured anterior rotation. His idea of the impossibility of rotation under the circumstances made him doubt the correctness of his diagnosis of the position, but the principles put forth this evening reassured him. May the death of the child, causing relaxation, be the cause of the face presentation?

DR. ALLEN does not expect others to accept his opinion, but in his denunciation of turning he alludes to the complete transposition of one extremity of the fetal ellipse for the other, and does not include the changing of one part of the head for another, but in the first class the poor chance of saving the child will not compensate for the increased danger to the mother.

DR. SMITH does not consider chin posterior an easy natural labor. On the contrary, it is the most difficult of natural labors. The chin strikes upon the posterior inclined planes, and is rotated to an anterior position, in which it engages under the arch of the pubis exactly as the vertex would. In multiparæ nature is able to accomplish this result, but in primiparæ assistance in rotation may be required, and even traction may become necessary. In contrasting the dangers incident to version by the feet, and those



involved in trusting to nature in this condition where the waters have been discharged, as they necessarily have, in the attempts to bring down the vertex, which will be first tried, we must remember that the child will be tightly grasped by the uterus, and that it must be twisted upon its long axis, as well as turned, to bring the nape of the neck under the arch of the pubis, and that this procedure will greatly enhance the danger to both mother and child.

DR. TAYLOR, in closing the discussion, remarked that the death of the child occurred after it was fully engaged, and was not a factor in causing the face presentation. When he made his diagnosis of position, the head was high up, and the child being small, he had no difficulty in bringing down the vertex.

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*Stated Meeting, October 4th, 1883.*

*The President, R. A. CLEEMANN, M.D., in the Chair.*

DR. W. H. PARISH reported a

PORRO-MULLER OPERATION,

and exhibited the uterus, the abdominal incision (which had united), and surrounding wall, the stump of the cervix in position at the lower angle of the wound, the entire external genitals and mons, including the vagina and bladder. The ureters were found entirely free.

SALLIE SMITH, a deformed dwarf, applied for admission to the Philadelphia Hospital in April, 1883. One of the internes placed her among the pauper women of the out-wards of the almshouse. There, all the conditions surrounding the dwarf were such as to contribute to her physical deterioration. The women in that portion of the institution are unduly crowded—the ventilation is entirely inadequate, and the food of a character unfit for a pregnant woman. Her presence in those wards was unknown to any of the visiting obstetricians of the hospital until June 15th, when Dr. Pauline Root, one of the internes, ascertaining her pregnancy and her surroundings, conveyed the information to me. I at once had her transferred to the obstetric wards where she was specially provided for and her condition carefully investigated. She was a native of Philadelphia. She was unable to give her age—although dwarfs usually appear to be older than they actually are, yet from what could be learned of her past life, from evident atheroma of her blood-vessels and from her appearance, I concluded that she must be over forty years of age. Her parents were poor, were born in Ireland, and died in this city during her early infancy. She had been told that her father died of heart disease, and her mother of insanity at the menopause. She did not know how or by whom she was cared for during her early childhood. She attributed her deformities to a fall supposed to have been received when she was a very small child. She was unable to walk until she was seven years of age. Her occupation, from the time she was first able to work, had been that of a house servant. Menstruation began at sixteen years, continued

at the usual periods, but rather profusely until the beginning of pregnancy.

She could not recollect ever having been seriously ill. I learned from some of her acquaintances that for a number of years she had been of intemperate habits, repeatedly becoming intoxicated, and indulging in promiscuous sexual intercourse. Her bad habits led to exposure to inclement weather, and, with the influence of cold and damp, doubtless led to the disease of the kidneys, to which I shall again refer.

She was pregnant for the first time. The date of her last menstruation was given by her differently at different times. At one time she would give the 1st of October, at another time, the middle of October, as the date when menstruation last ceased.

She felt movement of the child about the middle of February, though she was also uncertain in reference to the date. The *fundus uteri* reached nearly to the ensiform cartilage, and I concluded that the full period of pregnancy would be attained about the 10th or 15th of July.

She was fifty-one inches high, the head small, mind sluggish, and memory defective; yet she was not an imbecile. The clavicles and bones of the upper extremities, though small, presented no special deformities; they did not show the usual rachitic incurvations. The right thorax was very prominent posteriorly and laterally; the left thorax markedly depressed posteriorly and laterally. Both lungs, but more especially the left one, were greatly encroached upon by the deformed thoracic walls. The heart was displaced upward and to the left, its apex being on a level with and external to the left nipple. Pulse 86, of good volume, but intermittent. Bowels moved daily; urination frequent. Urine contained one-quarter albumen, and also granular and hyaline tubecasts. The eyelids were slightly edematous, but edema was not recognizable in any other part of the body. The patient complained of frequently recurring frontal headache. At times things seemed darkened to her, and dark specks appeared before the eyes. She had never experienced convulsions, but occasionally had slight fainting attacks.

The vertebral column was markedly curved. The upper third of the dorsal region was slightly convex posteriorly, the lower two-thirds markedly convex posteriorly, and also decidedly convex to the right. The lumbar portion was convex anteriorly and to the left, a left anterior lumbar convexity compensating for a right posterior convexity of the dorsal region. In the erect position, the lower ribs and the crests of the ilia seemed in contact, and the left iliac crest about one inch higher than the right. Posteriorly there was a deep depression at the sacro-vertebral articulation, and the posterior-superior spines were unduly approximated. Externally examined, the sacrum, in its upper two-thirds, seemed directed nearly horizontally backwards.

External measurements with a pelvimeter showed about fifteen

centimetres or six inches between the posterior surface of the top of the sacrum and the anterior surface of the top of the symphysis pubis. Normally this measurement is about eight inches. Deducting three inches from the external conjugate of six inches, would have made the internal or true conjugate three inches. The distance between the anterior-superior spines measured twenty-five centimetres, or about ten inches, the normal being ten and one-quarter inches. Between the normally widest portion of the crests of the ilia the distance was a little less than that between the anterior spine—that is, a little less than ten inches, the normal being eleven and one-half inches. The measurement between the crests being less than that between the spines, indicated the pelvis to be rachitic, though it will be seen that the pelvis was not the more usual, typical rachitic one. The external measurements did not indicate decided transverse narrowing of the true pelvis, though internal manual examination did show decided transverse narrowing.

Repeated internal examination showed the promontory to be jutting forward, and the anterior surface of the sacrum to be nearly straight, and directed almost horizontally backward. The symphysis pubis was correspondingly inclined downward and backward.

The oblique conjugate measured three and one-fourth inches, the depth of the symphysis pubis one and a half inches; hence, according to Lusk, deducting three-fourths of an inch from the oblique conjugate, I estimated the true conjugate to be two and a half inches. The transverse diameter of the superior strait was evidently considerably shortened, but I could not satisfactorily determine the degree of the shortening. The antero-posterior diameter of the excavation was taken to be less than the corresponding diameter of the superior strait, and all the measurements of the outlet less than the corresponding ones of the superior strait. The pelvis was diagnosed to be a generally contracted one, with proportionately greater diminution of the conjugates, and the general contraction increasing from above downward, so as to produce a somewhat funnel-shaped pelvis. The vaginal canal was narrow, the os uteri high up, and the uterine fundus markedly tilted forward. The abdomen was remarkably pendulous.

When the patient first came under our observation, pregnancy seemed to have reached about the end of the ninth lunar month, according to the most probable interpretation of the symptoms, and of the information she gave. The question arose, would it be best to produce a premature labor at the end of the ninth month, with a generally contracted pelvis, and a true conjugate of two and a half or two and three-quarter inches? I decided that should a premature labor be attempted under such circumstances, craniotomy, or some other similarly dangerous operation, would be eventually necessitated, and that the dangers of such operation would be increased by the addition of those incident to the production of



premature labor. Delivery with forceps, or by podalic version, seemed out of the question. There was a choice between craniotomy, symphysiotomy, Cesarean operation, gastro-elytrotomy, and the Porro operation.

In such a pelvis, craniotomy would have been difficult and tardy, and has been shown, especially by Parry, to be attended with a mortality of mothers too large to compete with abdominal section.

I did not prefer the Cesarean operation, because of its excessive mortality to mothers in European hospitals, and because of the six Cesarean operations performed in hospitals in this country, all were fatal to the mothers. A condition almost essential to recovery after Cesarean operation is rarely met with, even after normal deliveries, in hospitals. I refer to sufficient retraction of the uterus. A flabby uterus, after a Cesarean operation, leads to blood-poisoning and to general peritonitis. The experience of many hospitals, as also *à priori* reasoning, would make the Cesarean operation of very questionable justification in hospitals, especially in large maternities, and more decidedly still in general hospitals. The Philadelphia Hospital is not only a general hospital, but is also part of a large almshouse. Gastro-elytrotomy and symphysiotomy have given good results in the hands of a few operators, the former especially in America, the latter in Europe; but both operations have been performed with comparative infrequency, and the question of their respective merits cannot be determined by the very limited number thus far performed.

I do not desire to discuss *in extenso* here the general question of the relative value of the different operations performed for the relief of advanced pregnancy in very small pelvis. Among the considerations inducing me to adopt the Porro operation, with Müller's modification, were, the smaller mortality to mothers attending this operation in hospitals, and the opportunity it allows the operator of selecting daylight, and of securing the needed assistants.

The patient was placed under the influence of quinine, of Basham's mixture, and of occasional doses of the compound jalap powder. Woollen underwear and proper diet were secured for her. She was isolated from all lying-in women. Her condition did not improve, however, as the time for operation approached, but on the reverse, a persistent edema of the face, more troublesome headache, and more marked disturbance of vision, with an increasing quantity of albumen in the urine, all pointed to steadily increasing uremia. The time chosen for the operation was what was supposed to be the end of the thirty-eighth week of pregnancy. A large, well-lighted, well-ventilated room in the Children's Asylum, remote from the obstetric wards, and one that had for years been used as a private parlor, was selected in which to operate, and in which the patient was to remain after the operation. This room was divested of curtains, carpets, and furniture; its walls and

floors were thoroughly scrubbed with carbolized water. The room was then refurnished with chair, table, and a new bed. In short, every means was resorted to to improve, as far as possible, the unfavorable conditions incident to so large an institution as the Philadelphia Almshouse.

The members of the obstetric staff had agreed with me in the diagnosis of the patient's deformities, and also as to the propriety of the performance of a Porro-Müller operation. The patient was also kindly examined prior to the operation by Drs. Albert H. Smith, Robert Harris, M. O'Hara, and Anna Broomall. After receiving a full explanation of the nature of the operation, the patient gave her entire consent. The operation was performed on June 30th, 1883, with the assistance of Drs. Duer, Keating, Musser, Stryker, Montgomery, Clara Marshall, and Bernardy, all members of the obstetrical staff, and also with the assistance of Dr. McLoughlin, warden of the hospital. On the morning of the operation, the room was carbolized with the spray, but the latter was not used during the operation. All instruments were kept in a two per cent carbolized solution, and Listerism, minus the spray over the patient, was in the different details observed. On the morning of the operation the patient received a general bath, and the bowels were moved by enema. A half hour before the operation she received two ounces of whiskey. Dr. Joseph Hearn, one of the surgeons of the hospital, and an experienced anesthetizer, kindly administered ether during the operation. After etherization the bladder was emptied with the catheter. An incision was then made in the median line of the abdomen seven inches in length, extending from two inches above the symphysis pubis to about one inch above the umbilicus, passing to the left of the umbilicus. The slight bleeding from the lips of the abdominal incision was controlled by artery compressors before opening into the peritoneal cavity. The absence of intestine from in front of the uterus was ascertained by percussion before making the incision. The uterus was easily raised from the abdominal cavity.

Owing to the anterior lumbar curvature, and to the length of the incision, it was impossible to completely prevent the escape of intestines. After the uterus had been turned out, a protector made of two layers of flannel, with an intervening layer of protective silk, was placed over the abdomen; the object being to avoid chilling, and to prevent the escape of blood and other fluids into the peritoneal cavity. This protector, when used, was wrung from a warm carbolized solution. The next step was to place around the cervix the wire of an *écraseur*, and to constrict the tissues in its grasp to such an extent as to stop all circulation of blood through the uterus without cutting through the peritoneum. This step required speed, care, and judgment. The liability of a loop of intestine or of omentum to be caught by the constricting wire had to be carefully guarded against. Immediately that sufficient constriction had been secured, a short incision was made with a pointed bis-

toury through the antero-uterine wall down to the placenta, for the placenta proved to be attached anteriorly. The incision was then rapidly extended, from near the neck to the fundus, with a probe-pointed bistoury, guided by two fingers of the left hand introduced into the incision. The blood pent up in the uterus by the constricting wire escaped freely, but did not enter the abdominal cavity. The incision passed to the external surface of, but not through, the placenta. The hand was immediately introduced into the uterus through the exposed membranes at the fundus, and the child quickly turned out, the placenta being in this manœuvre detached in main from the uterus. The cord was promptly tied and cut, and the child handed to Dr. Keating. It was asphyxiated when delivered, and presented a very unpromising appearance.

It, however, quickly breathed and cried under the efforts of Dr. Keating at resuscitation. The rapid resuscitation was effected by alternately dipping the child in basins of hot and of cold water. After removing the infant, the uterus, with both ovaries and both tubes, was amputated a half-inch above the constricting wire—this point was about at the internal os. It was then seen that the wire had completely controlled the circulation, and not a drop of blood escaped from the stump of the uterus.

The next step consisted in passing obliquely through the stump two steel pins five inches in length, one above, the other below, the wire. After this a strong carbolized silken cord was passed around the stump, in the line of the wire, and partly tightened. The wire was then cut and removed, and the silk cord then very firmly tightened and securely tied. Special care was given to the tightening of this cord and to the tying of a secure knot. The ends of the pins rested laterally on the abdominal walls, and under the ends, on each side, was placed a piece of sheet-lead. The stump was thus secured outside of the abdominal cavity, and rested at the lower angle of the wound. New carbolized sponges on handles were introduced into the peritoneal cavity, down into Douglas' pouch, but the entire cavity was free from blood or other fluid.

The abdominal wound was then closed by deep and superficial silver sutures. The deep ones were introduced so as to include the peritoneum. During the introduction of the deep sutures, flat carbolized sponges were introduced beneath the incision, so as to catch what oozing might occur from the needle punctures. The external portion of the uterine stump was brushed over with carbolic acid, and then invested with lint saturated with carbolized oil. A strip, two inches wide, of dry carbolized lint was placed on the incision; over this a few strips of rubber adhesive plaster were applied transversely, over these a thick layer of carbolized cotton, and over all a flannel binder. The patient was put to bed, and surrounded with pans of hot water. Dr. Montgomery took charge of the patient's general condition during the operation, and administered during its performance four hypodermic syringefuls of whiskey. He reports that the time taken up in the operation,



from the beginning of the abdominal incision until its complete closure, occupied forty minutes. During the operation, the pulse ranged from 100 to 128, the greater frequency being during the making of the incision in the abdominal wall, and was probably due to impeded respiration. The constriction of the cervix had no appreciable effect upon the pulse. Soon after being put to bed, the pulse was 132, but in two hours it was 108 per minute, and of good volume. The respirations during the anesthesia became disturbed and imperfect, producing considerable cyanosis, and probably causing increased frequency of the heart's action.

The patient rallied well, as was shown by return to consciousness, by bodily warmth, and a fair pulse. For about sixteen hours her condition seemed very favorable, excepting that the kidneys had ceased to act. At the end of twenty-three hours, there was marked change for the worse; the mind wandering, pulse 140, temperature 100° F. An inspection of the dressing at that time showed some oozing from the stump—perhaps six ounces—but it had then stopped. An additional ligature was placed around the stump, and one of the uterine arteries was separately ligated; the other could not be found; the stump was also brushed over with Monsel's solution. There was no subsequent oozing. That there should have been any loss of blood in this manner was a surprise to me, as the original ligature was so very firmly tightened and secured, and had for a number of hours after reaction so perfectly controlled all bleeding. There was marked atheroma of the vessels of the stump, as was revealed *post-mortem*. After the twenty-third hour, the patient grew progressively worse, became uncontrollable and delirious, had convulsive manifestations, and died in coma. There was no vomiting until twenty-six hours after the operation, and it recurred only once. She experienced but slight pain, and sulphate of morphia was given in small quantity—4 gr. hypodermically, soon after the operation; again  $\frac{1}{6}$  gr. at the end of eleven hours, and subsequently about the thirty-sixth hour, because of the great jactitation and the difficulty of keeping the patient in bed. The morphine was given hypodermically by Dr. McLoughlin in such small amount that the coma could not have been due to it. Eight hours after being put to bed, the urine was drawn with the catheter. Subsequently, the catheter was introduced at different intervals, but on each occasion the bladder was empty, and it was also found empty at the *post-mortem* examination. Only three ounces of urine were secreted after the operation. The patient survived forty-two hours.

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Dr. John Gillespie made a careful analysis and microscopic examination of the urine secreted after the operation, with the following report:

The specimen of urine from the woman upon whom the modified Porro operation was performed was examined, with the following result:

The specific gravity was 1023: reaction decidedly acid. The urine was of a dirty, yellowish-brown color, and contained a large amount of albumen (rather more than one-third).

The amount of urea contained in the urine received by me was 10.5 gr. for the entire amount. Therefore, if only three ounces of urine were excreted in forty-two hours, the total amount of urea excreted would be about fifteen grains.

The sediment contained granular, hyaline, and epithelial casts, renal and bladder epithelium, and granular detritus and blood-corpuscles.

Dr. Wile, the acting pathologist of the hospital, conducted the *autopsy*, and I extract the following from the pathologist's records:

On opening the abdominal cavity, several slight adhesions were found between the visceral and parietal peritoneum in the region of the surgical incision. Blood-vessels around incision markedly congested. No exudation or other evidences of general peritonitis.

Stomach and intestines distended with gas; spleen small, atrophic.

Left kidney: Considerable displacement found between the sixth and seventh ribs. Somewhat lobular, on surface pea-sized cyst, which extends somewhat into the cortical substance of kidney. Cortex reduced, the seat of parenchymatous, solid, interstitial change.

Right kidney: Position normal; shape altered, considerable flattening on upper surface; hilus very marked; capsule adherent, seat of parenchymatous change. Both kidneys in state of contraction.

Pelvis: One ounce of bloody serum in Douglas' pouch. Peritoneal and subperitoneal tissue the seat of considerable edema.

Veins around vagina enlarged.

Cervix uteri virginal; orifice round.

Liver enlarged; fatty.

Thorax: On left upper anterior side pleura adherent.

Heart: Left side firmly contracted; right relaxed. Right auricle and ventricle seat of a firmly adherent chicken-fat clot. Left ventricle contained small amount of dark, slightly coagulated blood. Left ventricle markedly hypertrophied. Mitral valve, slight thickening. Papillary muscle considerably hypertrophied.

Lungs: hypostatic congestion; edematous.

Cause of death: Heart-clot.

*Report of histological appearance of kidney.* H. Wile, M.D.

The blood-vessels are for the most part congested, filled with corpuscles, and surrounded by a growth of connective tissue. The uriniferous tubules are found filled with cellular and granular debris. Some contain pigment, the result of slight hemorrhages. The epithelial lining of the tubules is granular, and in some places in a state of proliferation, indicating a catarrhal process. The growth of connective tissue between the tubules and about the

Malpighian bodies is more marked in some places than in others, and the interstitial process may be regarded as fairly established.

A careful measurement of the pelvis was made by Dr. S. D. Lazarus and myself after the viscera had been removed, with the following result:

Superior strait conjugate, . . . . .	3 inches.
Transverse, . . . . .	4 "
Right oblique, . . . . .	3 $\frac{3}{4}$ "
Left oblique, . . . . .	4 "
Oblique conjugate, . . . . .	3 $\frac{1}{4}$ "
Depth of symphysis, . . . . .	1 $\frac{1}{2}$ "
Obstetrical conjugate, . . . . .	2 $\frac{3}{4}$ "

Excavation:

Conjugate, . . . . .	2 $\frac{3}{4}$ "
Transverse, . . . . .	4 "

Upper four sacral vertebrae directed nearly horizontally backward; lower portion of sacrum and coccyx curved sharply forward.

Inferior strait:

Conjugate, . . . . .	2 $\frac{1}{2}$ inches.
Oblique, . . . . .	2 $\frac{3}{4}$ "
Transverse, . . . . .	3 $\frac{1}{2}$ "

A perpendicular to plane of superior strait is nearly horizontal, striking the abdominal wall about midway between umbilicus and top of symphysis.

A perpendicular to plane of inferior strait would strike the upper part of the third sacral vertebra.

The death of the dwarf must be attributed chiefly to the existence of interstitial and parenchymatous nephritis. She had rallied from the shock of the operation. There was no peritonitis, excepting in the immediate vicinity of the incision.

It was too early for septic poisoning to produce death, and there were no indications that such had occurred. The loss of blood had been trifling, and death occurred too soon to be attributable to exhaustion from other causes.

The acute and almost complete suppression of urine, the symptoms after the operation, the symptoms prior to the operation, and the results of examination of the urine and of the kidneys after death, all pointed to the diseased kidneys as the cause of the fatal result to the mother.

It is well to note that union had occurred throughout the entire extent of the abdominal wound. There were adhesions between the small intestines and the parietal peritoneum along the line of incision. The latter fact is of interest, viewed in the light of death in a few instances after laparotomy being attributed to strangulation of the bowel, due to constricting inflammatory bands.

The child was of small size, and died at the end of three weeks of inanition.



DR. R. P. HARRIS remarked that this was the only Porro operation that had been complicated by diseased kidneys. The case was an unfavorable one in consequence of this complication. The albuminous character of the urine was supposed to be due to mechanical interference by the enlarged womb, but unfortunately this was not so. The bad habits of the patient had led to a general disease of the arteries as well as of the kidneys. The former were atheromatous. The Porro-Müller operation has been performed thirty-four times. The unmodified Porro, eighty-two times; total, one hundred and sixteen cases, of which forty-eight per cent have been successful in saving the lives of the mothers. When the pedicle or stump is dropped, it ceases to be a Porro operation. Of thirteen cases in which the stump has been dropped, eleven have been fatal. Dr. Godson is writing a full history of this operation, including the many experiments which have been made on animals, to determine the best method for each step of the operation, and the causes of death. Dr. Porro has saved four out of five cases in his own hospitals. In the Milan Hospital, nine were saved out of twelve. In Germany the success has been poor, but in Austria better.

DR. O'HARA asked why the Porro operation should be modified when it had been so successful in the hands of the originator.

DR. HARRIS. — Dr. Müller was called upon to operate in a case in which the fetus had been dead for some time and was putrid, the uterus being distended with gas. To prevent any septic matter from finding its way into the abdominal cavity, he enlarged the abdominal incision, lifted the uterus out of the abdomen and used cloths around it and over the wound before incising the uterus. This patient recovered. The mortality this year has been very slight.

DR. E. E. MONTGOMERY had been associated with Dr. Parrish in this case, as one of the hospital staff, and at first thought the case should be allowed to go on to full term before operating, and that Cesarean section or laparo-elytroto-my, as practised by Dr. T. G. Thomas, should be the selected form of operation, but Cesarean section has been very fatal in large hospitals, doubtless because it is generally a last resort after the patient has been long hours in labor, and for that reason is dangerous. But if a large drainage tube was passed through, entering at the abdominal incision and out of the vagina, and a constant flow of antiseptics kept up, a good condition might be secured.

During the operation a few modifications suggested themselves: one of these was to divide the cervix uteri by a V-shaped incision, the peritoneal surfaces being united over the wound, a flat Peaslee drainage tube being introduced, and the stump dropped. Dr. Harris tells me that Schroeder has tried this and that it has been done twice by ———, once successfully.

He thought the wire of the *écraseur* passed around the cervix before removing the child a source of danger to the latter as well as being likely to embrace a loop of intestine.

DR. HARRIS, in criticising the plan of dropping the stump, called attention to the fact that the portion of uterus embraced in the ligature is not a pedicle; it is a stump, and will continue to contract, and oozing of blood or even profuse hemorrhage is liable to occur. It has been found impossible to prevent this by any form of ligature that has been tried. If the stump is dropped this hemorrhage or oozing will take place into the abdomen, and will be a certain cause of death. Dr. Isaac E. Taylor came near success, but his patient died from thrombosis on the twenty-sixth day, during an

attack of phlegmasia alba dolens. It would be very desirable to avoid the dragging on the abdominal wound.

DR. MONTGOMERY gave a short resumé of the cases treated by dropped stump and the causes of death in them.

DR. PARISH remarked that the disease of the kidneys was undoubtedly the cause of death—the implanting of the acute condition caused by pregnancy upon the previous chronic disease. He also spoke of the possible deleterious effect of the ether upon the system laboring under such a condition of the kidneys. It made the administration of ether in such cases a very serious matter.

DR. PARISH also exhibited specimens from a case of

#### EXTRAUTERINE PREGNANCY,

and made some remarks upon the history of the case. He had attended the patient in her first labor, seven years ago. She was a brunette of very restless and active habits and disposition, and was quite uncontrollable. She was up and about her house a few days after her labor, and the result was subinvolution, which persisted until her death; during the interval she had passed out of his care and had been subjected to local treatment including the use of sponge tents. There had developed pelvic inflammation, and later she was troubled with frequent micturition and dysmenorrhea. She afterwards came under his care again for treatment of these troubles, and on one occasion he had applied leeches to the cervix and gave her positive orders not to leave her bed, but festivities were going on, and she went down and assisted in making ice cream and cake, and later in eating them; this indiscretion was followed by a second metritis. He afterwards treated for the dysmenorrhea by numerous minute punctures of the cervix and the application of tincture of iodine and the introduction of a sponge tent. The next period was not so painful, and the second was missed. He told her she was probably pregnant, but two weeks later a slight show occurred, and fearing an abortion, he advised rest in bed; she refused an examination and would not be quiet; the flow continued but did not increase, but there was pain in the pelvis in addition. Eleven days after the flow commenced a sudden attack of intense pain occurred, the patient was completely prostrated and was carried up-stairs. As he was not at home, Dr. O'Hara was called in, and used morphia hypodermatically. I found, on examination, a mass in the posterior part of the pelvis, the uterus was pushed forward against the pubes. He diagnosed rupture of a Fallopian pregnancy cyst and internal hemorrhage, and gave opiates to relieve the intense pain. The pallor and exhaustion became more pronounced and death occurred thirty hours after the first symptom. Other physicians who saw the patient did not agree with Dr. Parish in his diagnosis. The autopsy revealed no recent peritonitis, there was blood in the pelvic and abdominal cavity, this had escaped from a ruptured cyst of the Fallopian tube. The fetus exhibited was found in the pelvic cavity. The position of the cyst was such that it would have been

an easy operation to open the abdomen and ligate and remove the cyst and ovary and cleanse the pelvic cavity. The Fallopian tube involved is dilated except at the uterine extremity. The other tube is occluded at the fimbriated extremity; inflammatory bands derange the relations of the different pelvic organs. We have here the history of inflammatory processes changing the epithelial linings and relations of the Fallopian tubes to the uterus and ovaries as predisposing causes of extrauterine pregnancy.

DR. HARRIS remarked that the hemorrhage after conception, the peculiar location of the pain, and the pallor make the diagnosis an easy one. He had one patient that recovered spontaneously. The operation suggested by Dr. Parish has been performed once successfully. Dr. T. G. Thomas made the diagnosis, and wished to operate, but the husband, a physician, differed in opinion, and would not consent; that patient lived sixty hours after the accident. Dr. Playfair in his book advises the operation.

DR. O'HARA saw the case early and could not make such a diagnosis; he saw no sign of internal hemorrhage then; he thought of peritonitis or cellulitis; there had been no history of a cast of the uterus. He did not see how a positive diagnosis of extrauterine pregnancy could have been made at that time. The patient was certainly going to die, and he would approve of an exploratory operation.

DR. PARISH remarked that Dr. O'Hara was perhaps right. He (Dr. P.) was the only physician present who looked at the case in that light, all the others disagreed and had their reasons. If this diagnosis of a probable extrauterine fetation had been made early, before the accident, then when the acute symptoms supervened a quick diagnosis could have been made as to the cause of the pain. He described a fold of peritoneum found behind the uterus, and as the clot had the appearance of different ages, portions being yellow, he suggested that an extraperitoneal hemorrhage had first occurred under this fold, perhaps ten days before the intraperitoneal hemorrhage which was the cause of death.

DR. BEATES reported the case of an infant which appeared well and hearty at birth, but died in collapse on the third day. An autopsy revealed acute gangrene of the mucous surface of eight feet of the ileum, hemorrhage had occurred into the intestine and was the immediate cause of death.

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## ABSTRACTS.

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1. Fontana: Contribution to the Subject of Chronic Oophoritis (*Dissert. from Fränkenhäuser's Clinic at Zurich*).—The author, in elaborating the material of 145 cases, furnishes a very noteworthy contribution to the clinical history of chronic oöphoritis, while the patho-anatomical feature had to be disregarded for lack of material.

In discussing the *etiology* and the *occurrence* of the above affection, F. points out, among others, that chronic oöphoritis is more frequent than has been assumed heretofore, there having been 145 cases among



3,054 patients in Frankenhäuser's clinic, or 4.75 per cent. (Olshausen gives a percentage of 1.33.) Of these 145 cases, 6 were under and 8 over 40 years; 85, or 58.2 per cent, were from 20 to 30; 46, or 31.72 per cent, from 30 to 40 years old.

As opposed to Gallard and Eustache, the author looks upon married life as an essential etiological factor, 68.28 per cent of his cases being married; nor can he side with Duncan and Olshausen who state that chronic oöphoritis occurs especially in the first years of wedded life.

Pregnancy and parturition form an indisputable predisposing factor in the production of chronic oöphoritis (parous women, 79.31 per cent; nulliparæ, 20.69 per cent); however, these two conditions can by no means be considered to be a frequent direct cause of this affection, inasmuch as a direct connection between the latter and parturition could be demonstrated in but 13.1 per cent of the cases.

Of displacements of the uterus, the author—differing from Kugelmann who makes special mention of descensus and prolapsus uteri—pleads for retroflexion, especially, as the etiological factor, and confirms in this connection the observation made by the last-named writer that the ovaries become inflamed now and then, when they are pressed upon by a pessary inserted for the reposition of the uterus.

F. doubts the occurrence of a purely traumatic oöphoritis; nor is he inclined to believe that general constitutional diseases play any important part in the etiology.

Special stress is laid on the causal connection between menstrual disturbances and oöphoritis, and this is illustrated by numerous examples.

Furthermore, the author makes mention of the occasional occurrence of chronic oöphoritis in quite young, especially chlorotic and anemic girls, in whom the affection is not infrequently developed in connection with the first menstruation, without any external cause.

As to the site of the disease, the author has observed it to be bilateral in 30 cases, or 20.7 per cent (particularly in gonorrhea and retroflexion of the uterus); right-sided, in 62, or 42.7 per cent; left-sided, in 53, or 36.2 per cent.

Under the head of "symptomatology," the author gives a very faithful delineation of the manifestations of chronic oöphoritis.

It may be emphasized that F. does not include suppression of the menses in the group of symptoms; for not only did it fail to be present in a large proportion of his cases, but, on the contrary, profuse menorrhagias occurred. The author has likewise been unable to convince himself of the truth of the opinion expressed in many places that painful defecation is present particularly in left oöphoritis.

"The salient point of all menstrual disturbances provoked by chronic oöphoritis consists, in the writer's opinion, in that whole series of symptoms and manifestations occurring as precursors of approaching menstruation, and again disappearing more or less suddenly, either partly or wholly, with the beginning of the flow." By this view, he places himself in antagonism to Olshausen, according to whom the pains generally continue throughout the entire duration of the flow. The intensity of all the troubles, according to our author, is in inverse proportion to the quantity of blood discharged.

Among the terminations of chronic oöphoritis, the author mentions in

detail the formation of abscesses which took place in 6.9 per cent of his cases.

In discussing the diagnosis, F. emphasizes chiefly the importance of bimanual examination as indispensable for the recognition of the affection, in which often considerable swelling (to the size of an apple) of the ovary is observable. A further prominent symptom becoming manifest during the examination is stated to be the sensibility to pressure of the ovarian tumor on moderately strong palpation.

In reference to the differential diagnosis from other affections of the pelvic organs, it may be noted that F. thinks it possible, in most cases, to distinguish certainly between inflammations of the ovary without and with peri-oöphoritic exudation.

The treatment for acute oöphoritis, in Frankenhäuser's clinic as elsewhere, is purely antiphlogistic. In the chronic form, the abstraction of blood, previous to the catamenia, painting of the abdominal walls with equal parts of tincture of iodine and tincture of gallic acid, Priessnitz cataplasms, and potassium iodide (4 : 180) are strongly recommended.

If abscess form, the author urgently advises rapid surgical evacuation of the pus.

Hegar-Batley's operation was not indicated in any of the cases under observation.

**2. Aronson: On the Rupture, Suppuration, and Torsion of Ovarian Cysts** (*Dissert. from Frankenhäuser's Clinic at Zurich*).—The author, in his painstaking dissertation, has undertaken the praiseworthy task of collecting from the literature accessible to him all the cases of rupture, suppuration, and torsion of ovarian cysts, and by amplifying the clinical material by corresponding observations from Frankenhäuser's clinic, obtains thus an array of 450 cases which are to furnish a most "objective" standpoint in estimating the etiology, symptomatology, diagnosis, and treatment of the accidents in question.

In the chapter on *rupture*, the author utilizes 253 cases from literature and 4 from the Frankenhäuser series. The etiological factors are accurately described and the relative cases tabulated under the different heads. Among other points, it may be emphasized that the author, basing on the cases described, attempts to demonstrate that no absolute proof in favor of this manner of rupture is furnished by the cases cited as prototypes of rupture due to thrombosis of the vessels of the cyst-wall. According to the author, mechanical influences (examination, tapping) are not given sufficient importance as etiological factors, and he believes that they are more frequently to blame than has been hitherto held.

In discussing the symptoms, A. calls attention to the fact that there is not a single one common to all cyst ruptures. This is true especially of the pain ascribed to rupture by most authors.

The percentage of the terminations of rupture is stated as follows: *without ovariectomy*, death, 41.13%; recovery, 37.66%; amelioration, 21.21%; *ovariectomy*: recovery, 57.69%; death, 42.31%. Of 257 cases, the rupture took place into the peritoneum 181 times.

From the material at hand, it is impossible to decide in how far the character of the tumor influences the result of the rupture. Dermoid cysts give the worst prognosis.

The four original cases of ruptured cysts are briefly the following:

CASE I.—Rupture of the cyst probably during labor; continuous oozing into the abdominal cavity; ovariectomy; recovery.

CASE II.—Rupture of a cyst while ascending the operating table for ovariectomy; spontaneous recovery.

CASE III.—Spontaneous rupture; refilling; ovariectomy; recovery.

CASE IV.—Rupture caused by tapping; oozing into the abdominal cavity; ovariectomy; recovery.

The author found reported 118 cases of *suppuration* and *sloughing* with and without rupture, and adds 3 of Frankenhäuser's cases. Among these there was proportionately a large number of dermoid cysts. As the general cause of suppuration or sloughing, bacterial infection is enumerated. In all these cases the morbid process manifested itself as a rather mild form of septicemia, and frequently the incongruity between the pulse and temperature pointed out by Horwitz was conspicuous.

The general result was as follows: death, 58; recovery, 51; amelioration, 12. The rupture occurred spontaneously 39 times; not spontaneously, 82 times.

Of the original cases, sloughing was due twice to tapping, once of spontaneous occurrence. In one case recovery ensued after ovariectomy; in another, rupture into the vagina and spontaneous recovery; in the third, death without preceding rupture, with symptoms of septicemia.

In regard to the diagnosis, the author lays particular stress on the resemblance of the process to typhoid fever (*typhus abdominalis*).

The basis for the chapter on *torsion* was furnished the author by 70 recorded cases and 2 of Frankenhäuser's.

Among the etiological factors, the author enumerates one as of paramount importance, namely, the condition of the bladder.

In discussing the symptomatology, the author, in view of his own cases, points out that the temperature, as a rule, does not rise very high, and especially that rigors have never been observed.

As to the course and termination, A. was in the position to note, in his 72 cases, recovery, 33 times; death, 27 times; result unknown, 12 times. Ovariectomy was performed 36 times, 28 with favorable, 6 with unfavorable result; result unknown in 2 cases.

All the ruptures which took place in these cases occurred into the peritoneum. In the author's original cases, recovery ensued by means of ovariectomy: in the first patient, torsion of the pedicle happened probably in connection with pregnancy; in the second, the cause was unknown.

The paper concludes with the chapter on prognosis and treatment of the three complications under discussion, and the result of the statistics in reference to the former is "that the ruptures, suppurations, and torsions of the pedicle occurring by and in pregnancy, during parturition, and in the puerperium, are comparatively less grave than the ruptures, suppurations, and torsions in dermoid cysts, and the worst may be feared when any of these complications have been produced by tapping." (Mortality, 71.43% !)

**3. Pawlick (Vienna): Contributions to the Surgery of the Female Urethra** (*Wiener Med. Wochen.*, XXXIII., 25 and 26).—The author discusses and illustrates two conditions: 1st, concerning the re-establishment of continence in the female bladder; 2d, concerning incontinence



in connection with integrity of the urethra. Incontinence is presumed to exist, as it does, in fact, in many cases after a vesico-vaginal fistula has been successfully closed; and the patient is forced to endure nearly as much annoyance therefrom as she suffered previous to the closure of the fistula. This suggested to the author's mind an operation for its relief, which operation he has performed with perfect success in four cases. The cause of incontinence in such cases is the non-union of the fibres which form the sphincter of the bladder, also the separation of the two urethral walls, which is apt to be considerable after operations for large fistulae, in which much traction is exerted upon the tissues. The author refers incidentally to the fact that a loose and wide urethra does not necessitate incontinence, if only the anterior and posterior urethral walls are in apposition. Such a urethra would require no operation, and it is to bring about this condition of apposition that the author performs his operation, which is supplementary to that for the closure of the fistula. The operation, briefly described, consists in removing an elliptical, or nearly elliptical piece of mucous membrane from the external urethral wall, its anterior point being a short distance behind the meatus urinarius, its posterior point being a short distance in front of the ostium vaginae, and its outer limit being the extreme point which a reasonable amount of tension would permit when the sides of the ellipse are folded together and stitched with fine carbolized silk. The inner limit of the ellipse would approximate the median line. The stitches are to remain seven days, and on the day of their removal a similar operation is to be done on the other side of the urethra. The reason for the second operation is obviously because the tissues might not stand the strain of a double operation. As already stated, the author has had success, that is, has restored urinary continence, in all cases in which he has operated. [To criticise this operation is not a difficult matter, certainly, from the standpoint of our best surgeons in vesical surgery. From personal observations in quite a number of cases operated upon in the Woman's Hospital, we feel safe in saying that incontinence after the fistula is closed is exceptional with us. Bandl's criticism upon the author's operations was that they were done *too soon*—possibly meaning that time would have restored continence. This objection the author answers satisfactorily by stating the urgency in each of his cases. If the operation be required, it would seem desirable to accomplish it, if possible, at one sitting, equalizing the strain upon the two sides, and using just as few sutures as the conditions would allow. We are certain that many operations are lost by placing the sutures too closely together.] The second contribution concerns a case in which incontinence existed, with a discharge of purulent matter from the urethra. Examination with the sound revealed the presence of an abscess in the urethro-vaginal septum, which had opened into the urethra. In the cavity of the abscess urine was collected from time to time, and this dribbled away as the woman moved about. The author operated upon it by removing that segment of the urethral wall which contained the abscess, and closing the wound with carbolized silk. The wound healed by first intention, and continence was restored. To speak more accurately, the abscess, in this case, should be called a retention cyst of one of the lacunae of Morgagni.

A. F. C.

#### 4. Leopold (Dresden): Investigations in regard to Menstruation

**and Ovulation** (Reprint from *Archiv für Gynäkologie*, XXI., 3).—The author, who has done so much good work in this, as well as in other fields of gynecological research, pertinently alludes to the difficulty of arriving at positive conclusions upon this subject, in respect to which his own investigations began to be published in 1877. The changes which menstruation causes in the condition of the uterine mucous membrane; the relations of menstruation to ovulation, whether the maturation of an egg is periodical or not; whether the corpus luteum represents a typical transformation; whether ovulation precedes or follows menstruation; and how, as to time, menstruation, the rupture of a follicle, and a consequent pregnancy, are related, are subjects and questions in regard to which nothing is settled and positive. The author addresses himself in this paper to the question, as to the relation, in regard to time, of the maturing of an egg, the rupture of a follicle, and the formation of a *corpus luteum* at the monthly flow. Six years have been occupied in examining material, which was removed from women who had undergone castration, or who had died only a short time before such removal. Twenty-nine cases are included in his series, covering periods of time which vary from the first to the thirty-fifth day from the *beginning* of the last menstruation. The macroscopic appearance in each case is also represented in beautiful, lithographic plates, thus adding to the interest and the value of the work. Valuable as are the facts obtained by the analysis of these cases, the author does not regard them as establishing fixed principles. They are rather to be considered as a contribution of probabilities which will, some day, enter into the argument whereby these principles *will be* established. As regards the Graafian follicles the probabilities are that one or more are always present in a mature condition; any great excitement, coitus, for example, may rupture one, either at once, or on the following day; hence a healthy woman is liable to conceive at any time during the child-bearing period. If pronounced anemia, or chronic inflammation of the ovaries exists, it is probable that conception will not occur, though menstruation may be regular, the cause being that the follicles are poorly nourished and do not rupture and discharge their ova. Two or more contiguous follicles may coalesce and rupture simultaneously; this may have a bearing upon the question of multiple pregnancy. These follicles vary in size and yet may be equally mature. Their distention with blood may be the cause of dysmenorrhea. The second series of probabilities is with reference to the corpora lutea. In the first day of its history it is a ruptured *follicle* filled with blood; on the third day it is a large blood cavity. From the eighth day appears a *fine* border, while the centre of the cavity remains distinct. From the twelfth day the border becomes thicker, and folds are developed in it. From the sixteenth day it assumes a yellow tinge. About the twentieth day the cavity begins to contract, the border becomes yellow, and sends out rays, in the shape of narrow folds toward the centre. Contraction continues from the twenty-fourth to the thirty-fifth day, the latter being the limit at which these observations were made. Corpora lutea are typical and atypical, the former beginning during the menses, the latter between them, and since the latter originate during the ebb of the pelvic tide, they are not so well provided with nourishment, and hence have a briefer history. It is therefore evident, if the foregoing be true, that menstruation may occur without ovulation, like-

wise that ovulation may occur without menstruation: a mature follicle may rupture at any time. The following propositions in regard to menstruation are also offered; it is a phenomenon which is peculiar to the female organism, the origin of which is in the ovaries, its means of external expression in the uterus. On account of its periodicity, it is to be reckoned in the category of other rhythmical vital phenomena, as the pulse and the respiration. Proof that menstruation is fundamentally a function of the ovaries lies in the fact that their removal causes its disappearance. It is true that the uterine mucous membrane shares in the recurring monthly congestion of the pelvic organs, but it must be borne in mind that the periodical congestion of the ovaries has *probably* long existed *before the uterine* menstrual phenomena appear. The latter is also greatly influenced by constitutional conditions. It is probably safe to say that the external manifestation of menstruation is *entirely dependent upon the anatomical condition of the uterus, especially as to its mucous membrane*. According to Pflüger, the exciting force of menstruation is the continuous growth of the ovules and the Graafian follicles, but *not* their periodical maturation.

As has been already remarked, much remains to be *cleared up* and settled in regard to this comprehensive and important subject. The outline is sketched by the author in the following suggestions: 1. The process by which the follicle is opened, and the time when it occurs, whether at a period, or between periods, is to be carefully investigated. This will require the collection of many specimens, and the further study of the typical and atypical corpus luteum. 2. The *tubes*, as well as the uterus, in normal cases, must be interrogated, just after an ovule has been liberated from the ovary. Fresh specimens from castration operations will be of avail for this purpose. 3. We must find out whether ovulation ceases before the menopause occurs, and how long a time before; also whether it begins before menstruation, and if so, how long before. 4. Whether in severe cases of anemia, and similar troubles, the maturation of follicles is delayed, or is entirely placed in abeyance. 5. Whether follicles which have coalesced mature, and discharge their collective contents at the same time. 6. What significance attaches to the blood-follicles?

A. F. C.

5. Runge (Berlin): Concerning the Justification of the Cesarean Section upon a Dying Woman, and Concurrent Obstetric Experience (*Zeit. für Geb. u. Gyn.*, IX., 2).—If, as seems to be the case, remarks the author, the fetus never participates directly in any severe and probably fatal illness from which its mother may be suffering, the possibility arises of rescuing its life, even in the presence of the mother's fatal illness. With the views which are at present commonly held upon this matter, it would be very difficult to prescribe the course of action which would be always and entirely right. A number of cases have occurred in the author's experience in which the question has presented itself of rescuing a mature or nearly mature fetus under the foregoing condition. One was in a primipara fatally sick of an acute disease at the eighth month of pregnancy. The case progressed to the death agony, and still the signs of vitality in the fetus were perfectly clear. Labor had begun, the os had dilated to the size of a quarter of a dollar, the head was presenting, but delivery by the natural passages seemed impossible. The mother died; the fetus was immediately removed by Cesarean section, but it was



already dead from suffocation. Question: Was the sacrifice of the child's life justifiable? In another case, in which the mother had reached the seventh month of pregnancy, death was approaching, also from an acute disease. Artificial abortion was accomplished, the child being extracted after turning. The mother died during the operation, the child was dead when delivered, though it was unmistakably living before the operation was performed. The author continues to state that Röser, in 1840, was the first to perform the Cesarean section upon a dying woman, the child's life being saved. He (Röser) gives as indications for the operation: 1. A diagnosis and prognosis, by the physician, of certain death to the mother within twelve hours. 2. Complete unconsciousness of the mother. 3. Impossibility of delivery by the natural passages, and assurance, by auscultation, that the child is alive before the Cesarean section is begun. In 1813, Nussbaum performed a similar operation, and also delivered a living child. From the author's experience in yet another case, in which the child was delivered alive, he considers that the operation is justifiable when the death of the mother is imminent, and when the child cannot be delivered by the natural passages. The operation should be performed before asphyxia, great sinking of the blood pressure, and excessive elevation of the maternal temperature have already influenced the life of the child to such a degree that resuscitation would be impossible. In August, 1881, Frank operated successfully upon a woman dying from burns, and pregnant at the eighth month. The mother died of her burns (?) ten hours after the operation. These four cases are all which literature affords of successful attempts at this procedure. The author next discusses at length the claims for and against the operation. He cites Spiegelberg as positive in his approval of it, Schröder as more cautious in his opinion, Zweifel as indorsing it only when the mother is *in extremis*. Very adroitly does he argue against the humanitarian view which condemns the operation absolutely, but he acknowledges that a prognosis of approaching death may be a mistaken one, and hence a valid objection may be raised against what will, almost certainly, be a fatal procedure. His apology, that delivering through the pelvis, even by *accouchement forcé*, when a parturient woman is in a dying condition, is universally recognized as proper practice, strengthens his plea for the cutting operation. Against the operation is also to be mentioned the difficulty of performing it, under the ordinary surroundings of private practice. With all these facts in view, if one is brought face to face with the following conditions, viz.: A woman far advanced in pregnancy; a disease that is almost certain to be quickly fatal to her; and a fetus in utero with perceptible and vigorous heart movements, the author conceives that the proper plan of procedure would be: 1. If possible, the accomplishment of artificial abortion. 2. The Cesarean section, if the former is impossible. 3. If neither of these plans is feasible, the Cesarean section immediately after death. Within the past three years, not a few cases have been published in which the life of the child has been saved by such an operation.

A. F. C.

**6. Lomer (Berlin): Concerning the Enucleation of Myomata** (*Zeitschr. f. Geb. u. Gyn.*, IX., 2).—The author observes that the success in myotomy revealed by Schröder's operations and publications makes it desirable to compare the value of the method of removal of myomata

by laparotomy with the method of enucleation by the vagina, and to draw certain limits within which the one or the other operation will appear to be preferable. Considering the great improvements which have been made in connection with laparotomy, the author believes that the vaginal method of operation should be limited to particular cases and conditions, and that, in the future, myomotomy will be much more extensively practised. He alludes to the extraordinary dangers in many cases in which the cervix is dilated, which operation may require repeated performance before the tumor can be enucleated. This process (dilatation) seems to him especially objectionable, on account of the proneness of the cervical mucous membrane to destructive changes following the hyperemia and ulceration of which it has been the subject, and also on account of the probable supervention of fever. Before the days of myomotomy, enucleation by the vagina was the only alternative to death from hemorrhage in the progress of the disease; now, laparotomy, with the opening of the uterus, the removal of the tumor in its walls, and the stitching together of those walls, offer a prognosis no more unfavorable than that which obtains in a complicated ovariectomy. He considers that the tumors which should be removed per vaginam belong to two categories: 1st, myomata of the cervix and the lips of the os; 2d, the submucous and interparietal myomata which have dilated the cervix and are thereby accessible from the vagina. If the cervix is not dilated by the tumor, and is somewhat long, enucleation is, as a rule, inadvisable. Another class of tumors in which operation per vaginam is advisable, which operation Czerny calls vaginal myotomy, includes subserous myomata of the cervix, and fibromata of the pelvic connective tissue. This operation may or may not require an opening into the abdominal cavity (through the vagina). A table of one hundred and twelve cases in which the vaginal operation has been performed during the past ten years is given as the result of a search through the literature of that period. Eighteen of these cases, or sixteen per cent, were fatal [surely, the author could hardly expect better results from laparotomy, if, as he thinks, the prognosis in myotomy is equal to that in complicated ovariectomy]. In addition to the table, histories of a number of additional cases are given in detail, illustrating the steps of the operation and various complications. Nothing is developed, however, which is not to be found in the text-books concerning the removal of fibroid tumors through the vagina. No one will be likely to disagree with the statement that the possibility of enucleation of a myoma of the cervix, when it appears as a complication of and an obstruction to labor, is always to be considered.

A. C. F.

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

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CONGENITAL PHIMOSIS, REFLEX CONVULSIONS FROM ACCUMULATED FILTH, CIRCUMCISION, CURE.

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BY

HENRY P. WENZEL, M.D.,

Milwaukee, Wis.

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ON August 26th, 1883, at 12 M., I was hurriedly called to see Hans, age thirteen months, German, still nursing. He had been able to ambulate around a chair, but during the last few weeks his lower extremities became weak, and he refused to walk. He had the habit of almost continuously manipulating his genitals, and the mother stated that since his birth the urine had passed drop by drop, while the prepuce became filled like a balloon, which was slowly emptied—"something my other boys never had."

Four days previous to my visit he had marked convulsions, for which a physician had been called who prescribed *tr. opii* in *emuls. amygdalæ*, but "the baby got no better," and the "fits got worse."

The child is large and well developed. The head is very hot; the face dusky red, alternating with pallor; the eyes are injected; the pupils irregular; the globes oscillate, are turned upward and outward; the lids are twitching; the mouth assumes various shapes; the extremities are moved by a slight jerking motion; the child occasionally utters a sharp scream, and relapses into stupor. His hands are within the napkin, and sharp convulsive movements with *opisthotonos*, followed by a peculiar scream, recur at intervals. When his hands are removed from the napkin, the thumbs are bent into palms, and the fingers closed tightly over them.

The "eye-teeth" above and below are pushing against hard, white, shining gums; the gums were lanced by crucial incisions,



but not more than a drop of blood escaped from each incision. The spasms persisted.

The napkin was now removed, and the penis, turgid and erect, grasped by the hands of the little sufferer, came to view. The prepuce was tightly drawn over the glans, and the preputial orifice scarcely admitted the point of a pin. On the dorsum of the glans, and extending into the fossa glandis, was a bean-shaped elevation under the skin, quite hard and slightly movable. Manipulation of this body produced the convulsive movements with opisthotonos, the spasm ending with a peculiar scream, and the patient again relapsing into stupor; these spasms were identical with those observed at first; but the twitching of the eyelids, the rolling of the eyes, and the irregular, jerking movements of the extremities continued.

The diagnosis was, of course, plain: congenital phimosis, and the convulsions were caused by reflex irritation from the accumulated filth.

Circumcision was immediately advised as the proper treatment, to which the parents at once consented.

The operation was performed in the usual manner, and the grayish, very offensive lump of cheesy hardness was removed, showing an ulcerated surface in the entire bed of the accumulated filth. A few adhesions between the prepuce and glans yielded easily. The wound was douched with corrosive sublimate solution (1:5000), and simple dressings were then applied. On the fourth day ol. eucalypti in cosmoline was substituted. On the tenth day the wound was completely healed.

The convulsions ceased at once after the operation, and the temperature became normal on the following day. The internal treatment consisted of small doses of potassium bromide and fluid ex. gelsemii, and sufficient citrate of magnesia was given to produce several easy, liquid stools daily.

During the four days following the operation, the child would not urinate unless placed in a hot bath. There was but little swelling, hence the cause of retention was due to other causes.

The child is now in perfect health; has a good appetite; the convulsions have not returned at this writing (Sept. 22d); the teeth have "erupted;" the tendency to manipulate the genitals has ceased altogether; the weakness in the lower extremities has vanished, and he "toddles at his own sweet will;" the urine, instead of passing drop by drop, is now ejected in a full-sized stream with force.

The case inculcates a grand lesson, and that is to examine the patients carefully, and especially, in small boys, to examine the genitals for the causes of mysterious reflex convulsions.

THE EPIDEMICS AT THE NEW YORK INFANT ASYLUM.

IN view of the frequent sensational newspaper reports of the recent epidemics at the Mt. Vernon Branch of the New York Infant Asylum, and on account of certain partial statements in the medical press, the following report is made public:

*To the Board of Managers of the New York Infant Asylum:*

Pursuant to the request of the Medical Board, we, the visiting physicians of the Mt. Vernon Branch, respectfully submit the following report of the history and management of the epidemics of measles, whooping cough, and diphtheria recently prevailing there:

Whooping-cough existed during July and August. Up to this time there have been 83 cases of that disease, and 17 deaths from it. Every one of these 17, however, also had measles. Measles appeared early in August, and the following is a tabular statement of our experience with that disease:

Children in the institution August 1st .....	224
Received subsequently .....	12

236

Number of individuals who had measles .....	203
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Number of children who escaped .....	33
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The recurrences of the rash, with all the accompanying symptoms of the disease, was a marked feature.

124 had measles twice .....	248 cases.
34 had measles thrice .....	102 "
1 had measles five times .....	5 "
44 had measles once .....	44 "
3 (adults) had measles once .....	3 "

Total measles .....	402 "
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Whooping-cough .....	83 "
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Diphtheria .....	10 "
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Entero-colitis .....	70 "
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Total in asylum .....	565 "
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*Deaths.*

Measles alone .....	none.
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Diphtheria, complicated and convalescent from measles .....	6
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Measles, complicated with whooping-cough, pneumonia, entero-colitis, etc .....	48
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Total .....	54
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## 1220 *Epidemics at New York Infant Asylum.*

Since August 1st, there have also been 18 deaths in children showing no symptoms of either measles, whooping-cough, or diphtheria, as follows:

Pyemia .....	1
Dysentery.....	4
Phthisis.....	2
Marasmus.....	1
Bronchitis and inanition.....	1
Capillary Bronchitis, with Catarrhal Enteritis.....	1
Acute Meningitis.....	2
Cholera Infantum.....	6
	—
	18
	—
Total.....	29
Per cent of inmates (children) .....	30.51
Per cent of cases of all diseases.....	12.75
Per cent of complicated measles cases.....	11.93

The average mortality, according to the best authorities, is, of

Measles.....	12 per cent.
Diphtheria.....	31 “
Diphtheria, complicated with whooping-cough.....	95 “

Rilliet and Barthez report an epidemic of measles occurring in an hospital, where the mortality was over sixty-seven per cent.

The complications causing death were as follows:

Broncho-pneumonia.  
Croupous-pneumonia.  
Capillary Bronchitis.  
Bronchitis.  
Acute Meningitis.  
Whooping-cough.  
Diphtheria.  
Enterocolitis.

In view of the severity of the diseases with which the Home has been afflicted, and on account of the harsh and unscientific criticism to which the general management has been subjected, a somewhat detailed statement may not be out of place.

While there appear to be several sources from which the diseases were introduced to the Asylum, there is no certainty respecting either of them. It is sufficient for us to remember that it is a common experience in similar institutions, and that when one of these contagious affections prevails, the others are pretty sure soon to appear. It is a recognized fact among authorities with respect to whooping-cough, measles, and diphtheria that, given an epidemic of one of them, the others will ensue and complicate the results. The rule is for whooping-cough to appear first, this to be followed by measles, and finally, towards the decline of the first two, diphtheria comes in a relatively small proportion of



cases. This sequence is exactly what we have experienced at Mt. Vernon.

The Home at Mt. Vernon is attractively situated upon an elevated site on the White Plains turnpike. It consists of a large main building and five outlying cottages, besides an old residence. The main building is three stories high, and is used for the quarters of the resident officers (matrons and physicians), drug store, parlors, etc. It contains also four wards, three large, about 75x20 feet, and one smaller. The cottages, with one exception, are two stories high; one is three. There is also a "Sanitarium," or play room; a one-story cottage inclosed with glass. In every instance except one there is only one room on a floor, constituting a ward and accommodating from ten to thirty children.

The regularly appointed visiting physicians were Drs. Ripley and Conant. The former found it inconvenient to officiate, and resigned. The latter made several visits to the asylum during this epidemic, when he was called out of town to attend a sick relative; he subsequently resigned. At the request of the President of the Board of Managers, Dr. E. A. Goodridge, of Flushing, one of the Managers kindly consented to act "ad interim." In the mean time, Dr. Caroline Marr, the resident physician, had had frequent and timely aid and counsel, we learn, from Drs. Joel Foster, Blakeman, and Burrall, members of the Executive Committee of the Board of Managers. Dr. F. M. Warner, formerly resident physician at the Nursery and Child's Hospital, was appointed attending physician about September 25th, and since October 3d has been making daily visits.

At the request of the Medical Board, Dr. Fowler, who is attached only to the 61st street branch, co-operated with Dr. Warner, and has visited the asylum with him almost every day since October 5th.

On October 10th, Dr. Edward Bradley, having been appointed visiting physician to fill the remaining vacancy, began his visits, and up to the present time the asylum has been regularly and faithfully attended by these three, working in perfect accord.

The conditions to overcome which we met were those growing out of the most severe epidemic of measles, whooping cough, and diphtheria, and, above all, the practical difficulties in the way of successful isolation. That is to say, there were twelve classes of children to be kept separate:

- (1) Measles; (2) measles with whooping cough; (3) whooping cough; (4) convalescent measles; (5) doubtful whooping cough; (6) doubtful measles; (7) Those who had been exposed to measles; (8) Those who had been exposed to whooping cough; (9) diphtheria; (10) doubtful diphtheria; (11) whooping cough and diphtheria; (12) healthy children.

Now, although we had about thirteen wards, we could in only few instances utilize both wards of a cottage, because occupancy either floor would infect the other, and we had at one time over hundred cases of measles on hand. Sad experience from the innings taught us this. Then, again, one cottage was generally

empty undergoing thorough disinfection. In the emergency, therefore, we erected three tents, capable of accommodating four patients each. These tents had tight board floors raised four inches from the ground, and were warmed by stoves. A thermometer was hung in each, and the temperature easily maintained at about 68° F. Into two of these tents we put our diphtheria cases. Into another the measles which cropped out among the cases afflicted with other diseases. The third tent was used as a quarantine for the physician and nurse attendant upon the diphtheria.

No outside communication was allowed except that which might arise from a specially detailed attendant who delivered the meals and medicines.

The sight of the tents excited the indignation of the local Board of Health, who came one night and ordered our patients removed to a cottage occupied by the farmer's family. This procedure we reversed two days afterwards. Hence, a conflict of authority and unfriendly reports.

At present, there are six cases of acute disease in the asylum: three diphtheria, two capillary bronchitis, one measles. *No case of scarlet fever has occurred in the institution.*

Dr. A. N. Bell, the regularly appointed sanitarian, has been in constant attendance since September 29th, and has perseveringly superintended in detail all matters pertaining to isolation, disinfection, ventilation, heating, water supply, drainage, etc.

We have had four trained nurses constantly on duty, besides those regularly employed.

The house physician, Dr. Caroline G. Marr, and her assistant, Dr. Otis, merit high praise for their untiring zeal and perseverance under circumstances the most trying. So far as we have been able to judge, Dr. Marr has shown herself competent to fill her position, for which she was examined and recommended by Dr. J. Lewis Smith.

Those familiar with the statistics of similar epidemics will see that our mortality has been under the average.

In our opinion, the total mortality is not excessive when we consider the following points: The epidemic was in an asylum; measles of a severe type supervened in children already debilitated and still crippled by the lung complications of whooping cough; the remarkably frequent repetition of the measles; and, finally, the advent of malignant diphtheria.

We may be permitted to add the regret that our work, arduous though it has been, does not seem to meet the approval of the local Health Board or the coroner, all of whom persist in attempts to question our diagnosis, treatment, and general management.

Very respectfully,

GEO. B. FOWLER, M.D.,	} <i>Attending Physicians.</i>
A. N. BELL, M.D.,	
E. BRADLEY, M.D.,	
F. M. WARNER, M.D.,	

We, the undersigned, members of the Medical Board of the New York Infant Asylum, approve of the above report.

OREN D. POMEROY, M.D.,  
HENRY G. PIFFARD, M.D.,  
J. CLARKE THOMAS, M.D.,  
C. L. DANA, M.D.,  
WILLIAM J. MORTON, M.D.,  
F. H. BOSWORTH, M.D.,  
J. LEWIS SMITH, M.D.,  
W. R. BIRDSALL, M.D.,  
W. F. MITTENDORF, M.D.,  
H. MARION SIMS, M.D.

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## ABSTRACTS.

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Prepared by J. FEWSMITH, JR., Newark, N. J.

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**1. Flesch: American Pediatric Literature** (*Jahrbch. f. Kindhilkde.*, B. XX., H. 2).—It is interesting and pleasant to find the German magazines noticing and praising American work in the to us rather new field of pediatrics. Flesch says that a glance through the American literature of the last few years on this subject is truly surprising, and one is struck with the diligence and earnestness with which on all sides the subject is pursued, especially when we consider that thirty years ago it was almost unmentioned, except in a few English text-books. This activity is noticed not only in the great centres, New York and Philadelphia, but in all parts of the land. The German element takes part in the work as well as the native American, the latter showing hereby a close and correct knowledge of the German literature on the subject. The Government at Washington, as well as in some of the States, shows most active interest in the hygiene of childhood and its surroundings. And if all this activity does not show such brilliant results as have come from American surgery and gynecology, yet, Flesch remarks, it must be borne in mind that even on their side of the ocean there have been but small advances made since the beginning of the study and use of pathological anatomy in children's diseases. The time has been used up mostly in the explanation of opinions and the contradicting of old theories. Among the selections quoted by Flesch (embracing articles by Jacobi, Peters, Lewis Smith, Brewer, Osterlong, Bartholow, and several others), we find a flattering notice of Dr. G. B. Fowler's article on the various forms of children's nourishment, published in the April (1882) number of this JOURNAL. After ascertaining the amount of nutritive material in the different kinds of grain, the doctor shows by excellent microscopic work that the shell, containing important nutritive material, extends to the very centre of the kernel. Our readers will remember that Dr. Fowler concluded that the microscope



was incompetent to decide as to the nutritive quality of food, and that he opposed some of Dr. Jacobi's opinions as to the gluten cells.

**2. Pfeiffer: Critical Examination of Mother's Milk and Methods of Analysis** (*Jarbeh. f. Kindheile.*, B. XIX., H. 4).—Dr. Emil Pfeiffer (Wiesbaden) has studied and written a great deal on this subject, and his conclusions are of value.

**I. CONDITIONS OF COAGULATION OF HUMAN MILK** :—Coagulation has been so long regarded as one of the characteristics of cow's and other animals' milk that it has been without contradiction attributed also to human milk, but it was not till 1838 that Simon described the great difference in the method of coagulation of the latter. After many experiments he concluded that it was the action of his chemicals on the *caseine* of the milk which caused the reaction, and that human caseine differed greatly from others. In 1869 Biedert went into the subject with considerable care. He noted in each experiment the strength of his reagents, the quantity of milk, etc., but the value of his results was lessened by the fact that the specimens of milk he used were too young—six to ten days—and had not become free of colostrum. His results were accurate and are well known, chiefly because published in connection with methods of treating cow's milk for children's use. They could be demonstrated conclusively. The consequence was that the use of dilute acids for precipitation of the solid matters fell into disuse, and as this had been regarded as the demonstration of *caseine*, some observers went so far as to say that the albuminous body of human milk was not caseine, but something else. Biedert, however, retained the name caseine, though stating that it differed from cow's caseine in several important respects, especially in not coagulating with dilute acids. This was fortunate for him, for later researches have shown that there are two albuminous bodies, one of which is caseine, and that more care in carrying out the acid tests will show its coagulability. Before going into this in detail, Pfeiffer describes the spontaneous coagulation of human milk. If milk is allowed to stand, it separates into three layers. The upper is the cream, opaque and white, except when made slightly yellow by colostrum. This layer forms in one to two hours, while the others require twelve to twenty-four hours. The milk at the bottom of the glass begins to get clearer, like whey. The clear layer becomes higher and gradually more sharply outlined against a white and less transparent layer. This latter grows narrower and narrower, while the clear layer increases. The younger the milk the broader the white layer. It is Pfeiffer's opinion that the depth of the white layer depends on the amount of albuminous matter present, and he offers this explanation: The more albuminous the milk the more stable is the emulsion, and the poorer the milk is in albumen the easier can the small fat globules escape and rise to the top, for of course the formation of the "white layer" depends on the same thing as the cream layer, that is, the floating upward of fat globules. When the milk has stood three days in a warm place it sours, and coagulation begins by the formation of fine flakes, mostly in the white layer. Some of these sink and some rise to the cream layer.

In experimenting with acids, it may be said in general that coagulation is more prompt the further removed the woman is from the puerperal

period and the shorter the time after the milk has been removed from the breast. In testing with acids, a great point is to find the exact amount of acid (dilute) needed, as one drop too much or too little may prevent coagulation. The author's method of ascertaining this is to put one to two ccm. milk in a test-tube, add from one to ten drops of acid solution, place the tube in water of 25° to 30° R., and gradually warm to about 45° R. His results with different acids are as follows, each being compared with the results obtained from hydrochloric acid :

*Lactic Acid*.—Solution used (pure, concentrated acid), 1 to 40, having spec. grav. of 1006.5. Coagulation prompt at temp. of 30° to 40° R. In one experiment, 2 ccm. milk which required 5 drops of hydrochloric acid solution coagulated with 2 drops of this. Another requiring 7 drops of h. acid sol. required 4 drops of this. It is evident from this why Biedert got no coagulation from lactic acid. He used too much of it. The same may be said of other acids.

*Acetic Acid*.—Solution used (concentrated acid in all cases), 2 to 100; spec. grav. 1003.7. Coagulation prompt at 30°–40° R. In one milk 4 drops where 7 of the hydrochlor. sol. were used; in another 5 drops : 8 of H.

*Sulphuric Acid*.—Solution 2 to 100; spec. grav. 1011.5. Well-marked coagulation. Relation to H. acid as 4 : 7 drops.

*Phosphoric Acid*.—Solution 2 to 100; spec. grav. 1006.0. Coagulation slow and slight. Relation to H. acid as 14 to 8 drops.

*Nitric Acid*.—Solution 2 to 100; spec. grav. 1004 0. In only one experiment was any coagulation obtained, and the relation to other acids was not noticed. The author believes, however, that when the exact process is understood experiments with this acid will also be successful, and claims that the results with so many other acids are sufficient to prove that the albuminous body in milk is really caseine. It is, however, totally different from cow's caseine. The latter coagulates easily and at all temperatures, and it forms tough curds. When human milk has soured, it also coagulates at lower temperatures; but, if rendered alkaline, no amount of acid will afterward coagulate it, while in cow's milk, no matter how alkaline, if sufficient acid is added, coagulation takes place. There is no known method of making the caseine of cow's milk like that of human milk. The nearest approach to it is by peptonizing it and then adding alkalies.

II. METHODS OF ANALYSIS.—Especially the demonstration of the albuminous portions of the milk. It being admitted that human milk, like other milks, contains different albuminous bodies as well as other matters, the points desired in a method of analysis are: Separate determination of the different substances; chemical cleanliness of each, and the greatest possible number separated from the same specimen of milk, especially as the quantity on hand is usually small. The older methods (Vernois and Becquerel, Simon, and others) answered none of these points, and can easily be proved inaccurate. The latest method is by precipitation, collecting the precipitate on a weighed filter, washing out some substances, and then drying and weighing. Till the author demonstrated the coagulation by acids, the precipitants generally used were tannin and alcohol.

*Tannin Precipitation*.—Recommended for cow's milk by Laraskiewicz, and first used by Biedert for human milk: 10 gm. milk with an

equal quantity of water being precipitated with 1 cm. of a 20% alcoholic tannin solution. The author uses a 10% aqueous solution instead of this. He found that he had to use varying quantities of this solution. For instance, 1 cm. would not precipitate fully 10 cm. milk. It was necessary to go on adding from 2 to 4 cm. The precipitate thus formed contains all the fat and all the albumen, as has been shown by Lieberman. If the albuminous matters are entirely precipitated, filtration is easy. If like quantities of tannin have been added to similar milks, the results will be identical, otherwise they vary with the amount of tannin. This is the first objection to the method. Second. The albuminous substances are determined en bloc, and with no chance of further separation. Third. The tannin in the filtrate prevents accurate analysis for sugar. The solid matters also cannot be obtained chemically pure, as it is impossible to wash out the tannin without dissolving some of the albumen. It is this latter point which, in the author's view, renders the tannin method useless. He cites figures and examples to show the variations obtained by it, and then passes it over.

*Alcohol Precipitation.*—This fulfils more of the requirements of a test than the tannin method. The method consists of adding to the milk an equal quantity of cold, absolute alcohol. If a large quantity of alcohol is used, or if heat is used, the butter is dissolved, and has to be again determined. As soon as the precipitate is filtered off, it should be washed out with equal parts of alcohol and water, together forming a quantity equal to the original quantity of milk and absolute alcohol. This filtrate is received in the same glass with the first, and if the alcohol is carefully evaporated and the water boiled, fine coagula will be found. These may be regarded as albumen, and the amount is determined by filtering, drying, and weighing. In a portion of the filtrate obtained from this precipitate of albumen (water having been added to the proper quantity), the sugar may be measured (Knapp or Fehling) and the remainder of the filtrate be used for determining by tannin precipitation the "residual albumen" (Eiweissrest). This term the author coins himself. Biedert and Lieberman precipitate the first filtrate with tannin without determining the albumen as above. According to Lieberman, the alcoholic precipitate plus the precipitate obtained in the filtrate by tannin precipitation contains all the albumen of the milk. Thus, by the alcoholic method, we first precipitate a body which may be regarded as caseine; then, in the filtrate from this, by boiling, we determine the albumen; and, finally, from this second filtrate, by tannin precipitation, we find the "residual albumen." In the same specimen, the butter and sugar are easily tested. It is evident, therefore, that the alcohol method is a good one. Numerous experiments have led the author, however, to prefer the acid precipitation, principally for the reason that he obtains by it a greater relative quantity of caseine and albumen and a smaller quantity of residual albumen. In other words, the caseine and albumen are more entirely and purely precipitated, and less of them left to the very variable tannin test.

*Acid Precipitation.*—Hydrochloric acid has been found to be the best. The method is described in full in the *Berl. Klin. Wochenschr.*, 1882, No. 44. In examining milk containing colostrum, it is best to dilute it one-half with water. Otherwise, filtration will be too slow. If more than twelve to eighteen hours is required for filtration, the result may be



spoiled. After the first filtration, the precipitate is washed with twice the quantity of water. This method determines the chemically pure caseine and albumen and the residual albumen. The substance precipitated first would, of course, be regarded as absolutely pure caseine (precipitated by dilute acid) were it not for the fact that some heat has to be used. This is one objection to the method, but, with care, is not a serious one. The danger is not of varying in the whole quantity of albuminous matter, but with too high a temperature part of the albumen seems to be included in the first precipitate. In all the tests, the residual albumen is less than by any other method. The plan of proceeding is to place the test-tube containing the milk and the already determined and accurately measured quantity of dilute acid in water of about 30° R., and gradually heat till signs of coagulation appear, stop heating, and let tube remain fifteen minutes. The author found the best temperature to be from 50° to 55° R. The temperature reached must be noted in each test. After this, the rest of the test is the same as with alcohol. The advantages of the acid method are therefore:

1. A body obtained by coagulation by acid, which is therefore to be regarded as caseine, and when obtained under 50° R. is pure; when obtained with higher temperature contains a little albumen.

2. A body obtained by boiling, which may be regarded as albumen, and of which more is obtained by this method than by any other.

3. A body obtained only by tannin precipitation, the source of error in most tests, called by the author "residual albumen," and in this test reduced to the lowest possible quantity. This is perhaps the author's strongest argument for the acid method.

4 and 5. The butter and sugar easily and exactly determined, the first by washing the precipitate with ether and the second from the filtrate by Knapp's or Fehling's tests. The following table shows a few results obtained by different methods:

	CASEINE.	ALBUMEN.	RESIDUAL ALBUMEN.	TOTAL ALBUMEN.
Acid method, spec. I..	1.246	0.121	0.385	1.752
"      "      " II.	1.228	0.107	0.337	1.672
Alcohol "      " I..	1.046	0.080	0.520	1.646
"      "      " II.	1.055	0.089	0.593	1.683
Tannin ".....	....	....	....	1.901

**3. A. Steffen : Tuberculosis** (*Jarbeh. f. Kindlkd.*, B. XIX., H. 2).—The author discusses tuberculosis in general, and the forms occurring in childhood in particular, from the standpoint of KOCH's observations. After a short history of other theories of tubercle, he gives in his full allegiance to the new departure, claims that without the characteristic bacilli tubercle is not demonstrable, and then, in the remainder of his article, seeks with a rather surprising zeal to bring into agreement with his theory all clinical facts. With the exception of the external musculature, the cartilages and the large vessels, all organs of the child may be affected by tubercle. It is more frequent in childhood than in later years, the greatest number of cases occurring between the second and

fifth years. "Tuberculosis arises from the reception of the specific bacilli in the body." The two entrances are by respiration and deglutition. The first is more frequent. This may be accounted for, in spite of the frequent opportunities of swallowing bacilli, by supposing that the secretions of the digestive glands hinder their further increase and development. Once in the body, the bacilli only grow on favorable soil. Such is offered, first, by a region of the body in which the secretions are diminished, the circulation sluggish, and nutrition poor. This explains the frequent occurrence of pulmonary tuberculosis accompanying failure of the right heart, while it is rare with trouble of the left heart, also its occurrence in cases of congenital narrowing of the aorta, in the weakness following severe sickness, etc. Blood stagnation offers the most favorable moment for the bacilli. Secondly, and to a much greater extent, the growth of the bacilli is favored by a peculiar predisposing condition of the body, generally classed under the name *scrofula*. Hereditary *scrofula* gives the body the phthisical habitus. The acquired form is due to poor circumstances of life, unhealthy dwelling and nutrition, and is allied to the condition produced by severe illness. Scrofulous children have a tendency to catarrhs of the respiratory and digestive tracts, which give rise to chronic inflammation of the neighboring lymph-glands. The necessity of a favorable soil explains why the occurrence of tubercle is not more frequent than it is—a fact hard to account for if we accept Koch's theory and believe in an atmosphere often laden with bacilli. It is only in very favorable circumstances, such as these, that the bacilli can grow. Hence often only one member of a family is affected; hence, when rarely a patient in hospital becomes affected, it is always one predisposed by other sickness, etc. There is another reason why the bacilli, when absorbed, do not always produce tuberculosis. They are sometimes beyond their age of proliferation and in the stage of dying off. They therefore do not serve as agents of disease, but gradually disappear, as has been microscopically proven. Thus is explained the absence of bacilli in some of the sputa of tuberculous patients.

The nidus and the development of the bacilli must be local. It will be more circumscribed or more extended according to the amount of bacilli, their age, and the condition of the parts they reach. For their growth it is necessary that the membrane should be denuded of epithelium. The more inflamed, and especially the more necrotic it is, the better soil it offers. The nidus once formed, further development depends on circumstances. The bacilli may die, become encapsuled, and the part heal. In other cases the tuberculosis extends, either gradually to the surrounding parts by direct contact, or, with more or less general dissemination, throughout the organism. In the latter case, the bacilli generally first enter the lymphatics, the neighboring glands are affected, and when once they reach the thoracic duct, "door and gate are opened to all organs." But the original nidus may be within the circulatory tract, in which case the intervening steps are absent. The path of invasion, the different peculiarities of various organs, the number and activity of the bacilli, therefore determine which and how many organs shall be affected. The path of invasion of course influences this, and when the organs first reached are in a state to receive the bacilli they will be affected; witness the frequency of tuberculosis after the rapid resorption of pleuritic effusion. Some consider the effusion as the result of preceding invasion by

bacilli, but Steffen explains the case by saying that the decrease and slowing of the circulation in the compressed lung offer a fine soil for the bacilli. Again, in certain families there are hereditary or acquired dispositions of certain organs towards tuberculosis; witness the frequent occurrence of it in the pia in some families. Or, certain organs may be so weakened or affected by disease as to offer a favorable resting-place to the bacilli, wandering about in the lymph or blood in search of a spot to settle in. Perhaps when they entered the blood they were too young to develop, and thus passed over one organ after another till they reached one in such favorable condition that with their already slightly increased age they could settle there, develop, send out their forces, take possession of organs they had once passed over, and thus the original port of entry be entirely lost. Finally, the smaller the number of bacilli that reach the circulation, the less general will be the symptoms.

As we have no remedy which will destroy the bacilli in the system, we are reduced to consider principally prophylaxis, and later the care of the system against inflammation, etc.

The prophylaxis consists in especial care and nutrition of children with any predisposition to scrofula, in separating from phthisical patients all those who suffer from chronic processes either in the lungs or digestive organs, in the avoidance of milk from tuberculous cows, in isolation, especially in hospitals, of tuberculous patients, great care of and quick removal of the sputa and the stools, disinfection and frequent changes of bedding, etc., and an atmosphere kept so cool that the development of the bacilli will be hindered, if not prevented.

In conclusion, Steffen discusses separately a rare form of tuberculosis in childhood, that attacking the peritoneum. The bacilli settle in the intestinal membrane, and extend either to the mesenteric glands or, more rarely to the peritoneum. It generally causes diffuse peritonitis and rapid death, though it may remain latent for some time.

**4. Rehn (Frankfurt): Osteomalacia in Childhood** (*Jahrbch. f. Kindhlkde.*, XIX. B., 2 H.).—Some time ago Dr. Rehn found a skeleton in the Frankfort Museum on which Prof. von Recklinghausen was able to positively demonstrate the existence of osteomalacia in children. Since then the author has given very close attention to the subject, and is now able to report five cases, in one of which, the diagnosis, made before death, was clearly proved at the autopsy, while the symptoms of the other were so nearly identical that there could be no doubt that the process was the same. This would seem to show that the disease is not so rare as has been supposed. A resumé of the cases shows that the prodromal symptoms are not characteristic.

*Symptoms:* When the disease is developed the most important symptoms are the abnormal softness and flexibility of the long bones, their thinness, the so-called rachitic enlargements at the epiphyses, and in union with these cardinal signs, poor nutrition, restlessness, sleeplessness, pain on being moved, and later on the well-marked dread of movement (pseudo-paralysis). Marks of fractures are often found, even of the scapula. In two of the cases there was softening of the cranial bones (craniotabes). The softening showed with the greatest prominence in the following order: forearm, leg, arm, and last the femora. In no case was diarrhea present. The spleen was enlarged in three cases. There



was no fever, no change in the urine, sometimes there was sweating, and in every case severe anemia and emaciation.

*Clinical History:* The course of the disease is chronic—months and years. Three cases resulted in cure, one was lost sight of, and two ended fatally in a short time, both from complicating broncho-pneumonia.

*Etiology.*—As predisposing cause the age is important, all the cases beginning before the end of the second year, the period of most rapid growth. All the cases were females. The most marked exciting cause was probably to be found in a poor diet, especially wanting in phosphoric acid and lime. Roloff's experiments prove that such diet will develop the disease in animals. There seemed to be no influence of inheritance, and there was no sign of syphilis in any case.

*Diagnosis.*—Hereditary syphilis being excluded by the absence of other signs, the only thing to be differentiated is rachitis, with which osteomalacia has undoubtedly been often confounded. In osteomalacia the bones are very thin, long, soft, and the epiphyses very slightly enlarged. In rachitis the bones are short, thick, hard, and the epiphyses always enlarged. In O. there are evident points of fracture, in R. there are bendings of the bones, evidently due to faulty growth. The sensitiveness on movement and the pseudo-paralysis are not seen in rachitis.

*Prognosis.*—More favorable than in later life.

*Treatment.*—The best of nourishment, first of all cardiac stimulants (wine, cognac), to avoid pulmonary stasis, and small doses of lime and iron. In one case cod-liver oil seemed to do good. The patients must be protected from fractures by splints, care in dressing, avoidance of baths, etc., and must be carefully guarded from exposure to catarrhs of the respiratory organs.

**5. Lederer (Vienna): Meningitis Tuberculosa** (*Jahrbch. f. Kindhldke.*, XIX. B., 2H.).—Dr. Lederer has had a very large experience, and is a close observer. His article is very interesting on account of its clearness and positiveness. Meningitis simplex in children is one of the rarest of diseases. In Vienna, where tuberculosis is so very frequent, it is rare to find cases among children of tuberculosis of the throat, lungs, or intestines, while meningeal tuberculosis is very frequent. In a very large number of cases, there were very few in which there were traces of the disease in other organs, or traces of scrofula, and autopsies frequently showed no signs whatever of tubercle in any other region than the pia. There was generally almost no failure of general health, and the circumstances of life, nourishment, etc., seemed to be very unimportant factors in the causation.

On the other hand, the influence of inheritance is supremely important, so much so that even when there is no sign of tuberculosis in the parents, the author has often reasoned backward from a case of meningitis in the child and found his suspicions correct in ensuing years as to the parents, just as hereditary syphilis in a child may give us our first suspicion of syphilis in the parent. Of all the cases of meningitis tuberculosa which he has treated, there have been only four in which no hereditary influence could be traced, and even in these there was some doubt.

In regard to the course of the disease, Lederer has seldom seen it begin with convulsions. These are generally preceded for some days by restless sleep, loss of appetite, etc. He has never seen a case *without vomit-*

*ing*, either at the beginning of the case and slight, or later on and persistent. There is sometimes a periodicity in the disease. The usual duration is two to three weeks, but in a few cases with periods of apparent cure, the disease may last two to three months. It is often difficult to recognize the disease early. It may at first be confounded with lung diseases, and later with typhus, and in young children with gastric catarrh. Here a heavily coated tongue may help us by pointing more to the stomach than the brain.

After discussing the various causes given in the books, the author concludes that none of them are satisfactory; and leaves the question open.

As to prognosis, he expresses his opinion clearly. He does not believe a tubercular meningitis is ever cured. When it is so hard to cure a simple meningitis, it is expecting too much of nature that a meningitis complicated with a tuberculous process, occurring in childhood and when it is impossible to provide fresh air and suitable food, should be brought to a successful termination. Opinions differ on this point, but the author can find no case of cure reported which is without some elements of uncertainty. One of the strongest apparently successful cases occurred in his own hospital work, but even this he now concludes was not tubercular meningitis.

**6. Heubner** (Leipzig): **Cerebral Infantile Paralysis** (*Jarbeh. f. Kindhdkde.*, B. XIX., H. 2).—In Dr. Rehn's report of the proceedings of the meeting at Eisenach is an interesting report of Prof. Heubner's paper on the above subject. The anatomical foundation of infantile cerebral paralysis has been but little studied. The following case throws some clear light on it:

A perfectly healthy child of fifteen months, after two slight convulsions, was attacked with high fever and with brain symptoms. With the sudden rise of fever there was complete loss of consciousness, contractures or tonic convulsions of all four extremities and the masseters, which lasted four weeks, was accompanied by intense hyperpyrexia, intercurrent convulsions and periods of collapse, and then gradually disappeared. When consciousness returned, there was complete paralysis of all four extremities. This lasted for two and one-half years, though the general condition of the child was kept up by, and muscular atrophy prevented by passive gymnastics. The child died from an acute catarrh.

The autopsy showed four cicatricial defects in the brain, one in the left central convolution (which was nearly destroyed), one in the anterior part of the right parietal convolution, the third in place of the completely destroyed right corpus dentatum (the capsule only being left), and the fourth, as large as a small cherry, so situated in the anterior half of the pons that the fibres of the pyramids of both sides were completely interrupted in their continuity.

Further examination showed the remains of an endocarditis on the anterior wall of the left ventricle and an old embolus in the left kidney, and then, very beautifully, an old embolus in the principal branch of the right arteria foss. Sylvii, extending far enough to block both branches. The case offers definite proof that loss of vascular supply, in other words, *embolus*, may be the cause of this form of cerebral trouble even in childhood.

**7. Biedert: Meningitis Tuberculosa Cured** (*Report of the Hagenau Hospital*).—Dr. Biedert is an authority of great weight, and interest therefore attaches to his report of a case of tubercular meningitis in a boy ten years old, ending in recovery. The boy is described as "very sick, consciousness dulled, insane, suffering from repeated violent convulsions, pupils reacting slowly and irregularly, constipated, vomiting, without having previously eaten. Recovery under energetic inunction of ung. cin., 2.0 gm. twice a day." [It is stated that there was no choroidal tuberculosis, and it really seems, from the report of the case, that there might be some question of the diagnosis, even when made by so careful a man as Biedert.—J. F.]

**8. Holwede: Hydrocephalus from Stagnation** (*Arch. f. Kindhlkde.*, B. III., H. 7, 8).—Dr. Holwede reports the case of an "erethitic scrofulous" boy of three years, who, on the ninth day of an ordinary pleuropneumonia, was seized with eclamptic attacks, which were repeated on the tenth and eleventh days, and followed on the twelfth by complete loss of consciousness, paraplegia of the upper and increased reflex irritability of the lower extremities. The pulse was slow, irregular, and the respiration of the Cheyne-Stokes form. There was hydrocephalic crying, strabismus, and stiffening of the neck. Diagnosis: Meningitis basilaris.

The right thorax was filled with a purulent pleural exudation, and this gave rise to the suspicion that the cerebral manifestations might be due to stagnation depending upon the prevention of venous flow from the brain. Thoracocentesis having been performed, the cerebral manifestations all disappeared, even the paraplegia, and convalescence rapidly set in.

**9. M. Herz: Case of Meningitis Basilaris Resulting in Cure** (*Arch. f. Kindhlkde.*, B. III., H. 5, 6).—The case was in a boy three years old, who was of healthy parentage and had always before been healthy. There had been no sickness of the brothers or sisters.

Suddenly, and wholly without prodromata, after a large meal, there developed some peculiar symptoms, principally apathy and dread of light. The temperature was 39.5°. On the second day the child complained of violent pains, was very somnolent, had marked contraction of the neck; temperature, 38°, pulse, 60 to 64, respiration and pulse irregular. On the fourth day there was striking emaciation, violent headache, strabismus convergens, contraction of the neck, gnashing of the teeth, sighing, slowness and irregularity of pulse and respiration, obstipation. This picture was completed during the following days by the sinking in of the abdomen and the appearance of Trousseau's spots. On the fourteenth day the swelling of the spleen was considerable. On the seventeenth day again higher temperature, 39.5°, meteorismus, swelling of the spleen increasing. The fever lasted till the twenty-fourth day of the disease.

On the twenty-first day an ophthalmoscopic examination (Hock) revealed cloudiness of the pupils without swelling. "This condition points to meningitis basilaris." Dr. Ultzmann examined the urine on the twenty-fourth day and found it highly concentrated, with increase of indican, oxaluria—a condition which is more frequent in meningitis basilaris than in typhus.

The temperature gradually fell and convalescence proceeded well. Dr. H. defines the case as "meningitis basilaris non tuberculosa cum hydrocephalo."



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## ORIGINAL COMMUNICATIONS.

HABITUAL MISCARRIAGE: ITS CAUSES AND PREVENTION.

BY

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A NORMALLY constituted woman, should she conceive, ought, in the nature of things, to carry the fruit of her womb to term, barring accident, constitutional vice, general or local disease. Such is the rule. The exceptions are not inconsiderable, and the successful treatment of habitual miscarriage is apt to tax severely the patience and resources of the physician. Owing to the impenetrable veil which shrouds the functions of reproduction, there must ever, for all any one can predict, be certain causes which will baffle our best endeavors and defy our keenest insight. That microscope, powerful enough to fathom the pathological histology of the ovule and spermatozoon, does not yet exist. Till man's ingenuity, therefore, shall have enabled him to construct so delicate an instrument, latent, or rather hidden causes of habitual miscarriage must remain hidden. Meantime, a closer study of the apparent causes may possibly help us towards saving many an embryo, and granting to many a woman her heart's desire—offspring. It is a

proper task, then, to present, in 'a connected way, whatever bears directly on the subject of habitual miscarriage, and to endeavor to formulate the means at our command for its prevention. The propriety of the task is all the more apparent when, on looking through the voluminous literature pertaining to obstetrics, I find only scant and, at best, disconnected reference to the subject.

At the outset, let me protest against a not uncommon practice of giving as an explanation the element "habit." This is simply begging the question. It may be laid down as a rule that some phenomenon, usually morbid, is at the base of every miscarriage. Usually, the death of the fetus is the immediate cause; but we must look behind this fetal death for the prime cause which forbade it life. To say that "habit" was the causative factor, is only applicable to those cases the outcome of some latent, hidden condition; but even here there will usually be found a starting-point for the habit. Granting that labor at term results from the fact that the uterine contractions, which insensibly occur during the whole course of pregnancy, at the ninth lunar month reach their acme, it is conceivable that a womb which has once miscarried at a certain month may repeat the process again and again, from the recurring nervous discharge at the same time. Recourse to such an explanation, though unscientific, will often have to suffice. The human mind, however, in its search after truth, longs for something more exact, more tangible; and, fortunately, in the vast majority of cases of habitual miscarriage, the microscope and the scalpel afford it.

What, then, may cause habitual miscarriage? Broadly, either the fetus is at fault, or the mother. In the former instance, seeing that the ovum, when once impregnated, is dependent entirely on its mother for sustenance, and hence for disease as well as health, it is obvious that, whatever imperfection it does not derive from the mother, must come from the father. If the fetus dies, then, and from this very fact is not carried to term, it is well to remember that one or other, perhaps both of the parents, may have been the prime factors in causing its death. In the second instance, the mother alone is primarily at fault, through some local cause which renders the uterus unfit soil for an ovum.

In general, the causes may be tabulated as follows :

1. Syphilis.
2. Maternal anemia.
3. Uterine disease, and disease of the uterine appendages.
4. Uterine displacements.
5. Chronic cellulitis and peritonitis.
6. Laceration of the cervix.
7. Intermittent fever.
8. Chorea.
9. Bright's disease.
10. Tumors.
11. Lead poisoning.
12. Reflex conditions.

Before entering into a detailed study of these causes, it will be of interest to give, in brief, the opinions of various authorities as to the etiology of habitual miscarriage. Leopold has probably studied the subject to a fuller extent than any one else. His monograph, as it appears in the *Archiv für Gynäkol.*, VIII., 1875, contains reference to most of the early literature, and it is to him I am indebted for many references going to form the following résumé :

D'Outrepoint (*Neue Zeitschrift f. Geburtskunde*, VI.) considered the causes as lying either : 1st, in the respiratory organs ; 2d, in the uterus ; 3d, in the ovum ; 4th, in the umbilical cord ; 5th, in the ovaries ; 6th, in the placenta.

Simpson (The Works of Sir J. Y. S., Vol. I., Obst., p. 102) ranked intrauterine peritonitis as the prime factor. This fetal disease may arise either from external violence, or from maternal syphilis. Evidence of the last cause he found frequently present in the fetus after death. The next factor he considered to be disease of the placenta, such as hepatization, abscess, fatty degeneration, and hypertrophy.

Fuhrhaus (Inaug. Dissert., Marburg, 1831) tabulates the causes as proceeding : 1st, from the mother ; 2d, from the father ; 3d, from the ovum ; 4th, from unknown conditions.

Porter (*Dublin Quart. Journ.*, 1857) considered syphilis the main cause ; and Martin (*Mon. f. Geb.*, 19, 85, 1862), from a series of observations, came to the conclusion that the most common cause of habitual miscarriage was the death of the fetus from a disease to which he gave the name "hydrops sanguinolent-



tus," characterized by dropsy of all the serous cavities, as well as accompanied by bullæ on the external surface. The disease was the outcome of syphilis in one or both parents, particularly in the father.

In 1865, Döbner (*Würzb. Med. Zeitschr.*, VI., 37) recognized two causes of habitual miscarriage: 1st, maternal anemia; 2d, syphilis. Scanzoni agreed with him ("Lehrbuch," II., S. 16) and laid main stress on syphilis.

Spiegelberg (*Monats. f. Geb.*, 34, S. 376) considered hereditary syphilis as the cause; in a later paper (*Archiv f. Gynækol.*, I., S. 11), however, he has reported cases not dependent on syphilis.

Leopold (*loc. cit.*, p. 236) divides the causes into four: 1st, syphilis; 2d, anemia; 3d, chronic uterine disease; 4th, inherited disposition, and highly nervous constitution of the mother.

Playfair ("Science and Practice of Midwifery") states that the most common cause is the death of the fetus, "which leads to secondary changes, and ultimately produces the uterine contractions which end in its expulsion." The causes of fetal death cannot always be ascertained, sometimes depending on maternal conditions, sometimes on ovular, and again on both. "Syphilis is well known to be one of the most frequent causes, and one that is likely to act in successive pregnancies." "It acts in some cases through the influence of the father in producing a diseased ovum, and it is the only cause which can with certainty be traced to the state of the father's health." Amongst other causes of habitual miscarriage, he mentions fibroid tumors, old peritoneal adhesions, retroflexion of the uterus, inflammation of the cervical and corporeal mucous membrane.

Cazeaux ("Theoretical and Practical Midwifery." Revised by Tarnier) accords to syphilis the principal rank, and calls attention to the fact that a vitiated spermatic fluid may be the cause of fetal death. He says (p. 565) that M. Guillemot attributed the numerous miscarriages of a lady who consulted him to this cause; for the husband, though of a suitable age, exhibited all the signs of premature decrepitude. At his death, she married again, was often pregnant, and always went to term. Atmospheric conditions, Cazeau also points out, are not without influence in the production of abortion. The women inhabiting the summit of the Vosges are very subject to

abortion, and they descend into the adjacent plains to avoid the accident (p. 562). M. Cazeau also lays stress on the fact that the age of the husband has an influence. "Ova fecundated by men who are either too old or too young rarely become, it is said, fully developed, and the same remark applies to those whose constitution is exhausted by excess or debauchery of any kind."

Lusk ("The Science and Art of Midwifery") places syphilis amongst the principal causes. As others, endometritis, displacements, especially retroflexion, perimetritic inflammations, carcinoma and fibroids, and a peculiar condition of nerve irritability. In the newly-married woman "one abortion sometimes follows another in rapid succession. Whilst the first abortion may have been due to some accidental cause, the sequence is often kept up by a morbid condition of the endometrium, generated by shortness of the intervals between the pregnancies, which does not allow the restoration of the membrane to a normal condition."

From this passing survey of much of the literature pertaining to habitual miscarriage, it will be seen that most authorities are in accord in regard to the important rôle which syphilis plays in its production. Entering then into a consideration of the causes as already tabulated, I will begin with the specific diathesis, seeing that it is the predominating factor.

**SYPHILIS.**—At the outset, without any intention of discussing at length the manner in which the fetus may become affected, it is necessary to refer briefly to the subject in order to lay a proper foundation for the rational treatment. The fetus, obviously, receives the poison either from the father or the mother. Though semen from a specific source has been inoculated in healthy individuals without any ill effects, it must be admitted that the semen may be the carrier of the specific product, seeing that not infrequently, whilst the mother remains healthy, and the father shows no active specific lesion, the mother aborts frequently or carries to term fetuses presenting evidences of syphilis. Usually, though the father be subject to the disease, unless he infects the mother, the fetus will escape. Exceptionally, however, as clearly proven by Fournier ("Syphilis et Mariage"), the paternal influence is far from *nil*; and such cases are all the more noteworthy from

their rarity. If Fournier were alone in holding this view, the facts he presents would set it beyond controversy. But Ricord, Diday, Troussseau, Depaul, Carl Ruge, etc., have also reported cases of the kind; therefore we must accept the proposition laid down by Fournier that, "however rare and exceptional, relatively, be the fact of transmission of syphilis from the father to the fetus, it can nevertheless occur in a certain number of cases." This author has collected thirty-six cases of this nature, where the children were born dead or dying. The importance of the due recognition of the possibility of fetal infection after this fashion will be seen when I come to speak of treatment.

Aside from the fact that the father may thus infect his child, it is noteworthy that at the same time the mother may become infected, the transmission being through the fetus. In such a case she presents no primary lesion; therefore, unless the physician be on his guard, he may overlook the fact that the symptoms she will present are due to syphilis, and not be able to explain her repeated miscarriages. This method of infection—the *choc en retour*—is called by Fournier, "Syphilis par conception;" by Jonathan Hutchinson, "fetal blood contamination."

Now why is it that syphilis is such a powerful agent in causing miscarriage? How does the poison act? In the first place, it so alters the mucous membrane lining the uterus as to forbid the growth of a healthy ovum, whence decidual, chorionic, and placental diseases. In the second place, it infects the fetus, leading to changes in its organism incompatible with life, such as intrauterine peritonitis, as originally demonstrated by Simpson, or to what Martin has called "hydrops sanguinolentus." It is not strange, therefore, that the offsprings of syphilitic parents die prematurely, or if brought into the world, in all probability will exist but for a time. The ovum has not only to struggle against diseases implanted in itself, but also is likely to be poorly and insufficiently, if at all nourished. The pathology of ovular and decidual diseases has not yet been clearly worked out. Their dependence on syphilis is, at best, but hypothetical, for, though found in cases where the specific taint is undoubted, they are likewise, at times, apparently the results of other causes, as, for instance,



a morbid state of the endometrium existing prior to conception. Most authors make the following artificial classification of the diseases which may affect the fetus and its appendages as the result of specific infection :

- (a) Diffused chronic inflammation of the decidua.
- (b) Polypoid decidual inflammation.
- (c) Cystic degeneration of the chorion.
- (d) Fatty degeneration of the placenta.
- (e) Stenosis of umbilical vessels.

The distinctive points in their pathology are, that in the first form there occurs a hypertrophy of the decidua following on an increase in its cellular elements; in the second form there is also an hypertrophy, limited, more particularly, however, to the interstitial tissue, and on the ovular surface of the decidua are to be found polypoid growths. The new connective tissue compresses alike the uterine follicles and decidual blood-vessels, leading not infrequently to fatty degeneration. This form of decidual disease was first described by Virchow, and by him considered a result of syphilis. It is, at any rate, not an uncommon cause of abortion, seeing that the inflammatory process, from its very nature, must interfere with fetal nutrition and development.

Cystic disease of the chorion at times occurs repeatedly in the same woman, and leads to miscarriage. Whence the view that the disease is dependent on some diathesis, such as syphilis, is plausible. There is strong ground, however, for the belief that often the change in the chorion is secondary to the death of the fetus, the principal one being the occurrence of twin pregnancies in which, whilst one chorion degenerates, the other does not. Whatever the cause, and probably both will hold, the pathology of the affection consists in a dropsy of the chorionic villi, preceded by an increase in cellular and connective elements.

Fatty degeneration of the placenta has been particularly described by Barnes, who considers it an outcome of syphilis. The fatty change affects especially the cells of the villi and the blood-vessels. According as the degenerative process is of greater or less extent, in so far will fetal nutrition be imperilled and abortion result. Goodell (*AM. JOURN. OBSTET.*, vol. II., p. 535) suggests that this fatty degeneration may possibly

be simply the occurrence at an earlier stage of what is normal at term.

Stenosis of the umbilical vessels is a rare, at any rate, not often noted cause, of fetal death. In some cases the condition seems to depend on hereditary syphilis. In others the connection is not quite so clear. Winckel, as quoted by Leopold in his article (*loc. cit.*, p. 257), has reported six cases, and in one only could he trace the pathological condition to syphilis. Leopold reports a personal case where syphilis could be absolutely eliminated from both parents. The occurrence of the lesion, whether dependent on syphilis or not, ought to be borne in mind, as it may often be the cause of fetal death and subsequent miscarriage, thus explaining cases which otherwise would be classed as due to hidden causes, or result from "habit."

Passing now to the treatment of habitual miscarriage dependent on syphilis, the two main facts must be borne in mind that the cause may reside either in the mother or the ovum, the latter, of course, deriving the infection from its father. Treatment, then, must be directed to modifying the effects of the poison on the maternal side as well as the paternal. The old fear of using mercury during the course of pregnancy, lest it should interrupt it, has disappeared. It is the one drug indicated in sufficient dose to fall short of salivating the patient. Its dosage must be watched carefully, lest the patient become enfeebled. The best method of administration, if not the cleanest, is by inunction, as thus gastric disturbance, which is physiological in pregnancy, is not likely to supervene in excess. The cause of miscarriage once laid to syphilis, both parents should be treated, because there are cases where the infection proceeds from the father, sparing the mother unless she become secondarily affected through the fetus. The following case from Fournier (*loc. cit.* p. 49), will emphasize the necessity of paternal treatment :

"Fifteen years ago I met, by chance, an old college mate whom I had not seen for a long time. During the course of our conversation, my friend told me his troubles. 'I am,' he said, 'sorely afflicted ; my wife has just miscarried for the fourth time, at about the second month ; and what is worse, all her miscarriages have resulted from no discoverable cause. My wife is in excellent health ; and yet, to my sorrow, I foresee she will never

bear me children.' Now I remembered that, whilst my friend lived in the Quartier Latin, he had had syphilis. So I placed him on the mixed treatment, and fifteen months later his wife presented him at term a child now twelve years old."

Finally, in any treatment of habitual miscarriage dependent on syphilis, the pathological changes which may occur in the decidua should be borne in mind. These changes have all about the same effect—the deprivation of fetal nourishment. Whilst then giving mercurial or the mixed treatment, it will be well to make use of a drug recommended, I believe, first by Simpson, at any rate, highly spoken of by Fordyce Barker—the chlorate of potash. The rationale of its action is that, through its decomposition, it increases the oxygen in the mother's blood, and hence affects favorably the fetal nutrition. In one case under observation for many months at the Polyclinic, the drug seemed to have some influence, for the patient who had previously miscarried uniformly at the fifth month, this time carried her fetus to the seventh. Dr. Mundé informs me that he has met with two cases of habitual miscarriage; one, nine times in the fifth month, the other, five times in the third month, in which the continuous administration of chlorate of potash and tr. chloride of iron during the whole pregnancy (with rest in bed for several weeks at the time of the misarriages), resulted in a normal labor at term, and a healthy living child.

General treatment, further, is not all. The effect of the specific poison on the uterine mucous membrane is to be remembered. Conjointly, then, with general medication, something may be hoped for from local applications to the endometrium in the intervals between conceptions; for thus the hyperplasia, which often primarily exists in cases where the diathesis precedes conception, a hyperplasia rendered worse by each recurring miscarriage, may be limited in amount and less risk be run of its invading the decidua.

If now, by means of the above outlined treatment, we are enabled to assist the mother in carrying her child nearer to term than she has ever done before, what is the next step? The induction of premature labor as soon as the child is viable in case there appears evidence of heart failure. Abortion from syphilis, where the child derives the infection from its



mother, is apt to occur about the sixth month. If, then, the mother be assisted to carry the child to seven months, she should be directed to spend most of her time in the horizontal position, to avoid fatigue, and to abstain from sexual intercourse. The physician should listen frequently to the fetal heart, and at the first sign of weakness, he is justified in inducing labor. The question of the means to use for this purpose obviously does not come within the scope of this paper.

**MATERNAL ANEMIA.**—This cause, *a priori*, would appear to be a factor in the production of miscarriage. The fetal nutrition varies *pari passu* with that of the maternal. Any cause, therefore, which affects the latter unfavorably, must react on the former. The chlorotic woman is already poor in blood; let the hydremic condition which accompanies pregnancy be superadded, and it is manifest the fetus stands small chance of life. The placenta, if properly formed, receives from the mother improper material for fetal sustenance. The wonder is, indeed, that the mother should ever go to term, not that she should miscarry. A disposition to abort, also, is noted in corpulent women. Lusk ("Science and Art of Midwifery," p. 292), explains this on the supposition that the blood is insufficient in quantity and quality to supply the wants of the fetus. On Cazeaux's authority, as already given, it is a fair inference that paternal anemia may be at the base of miscarriage. At any rate, the rational treatment of habitual miscarriage seemingly dependent on anemia, should be directed to the cure of both parents, in case both present symptoms. As to what the treatment is, it needs no repetition here. One point only must be insisted on, that any treatment must be long continued.

**UTERINE DISEASE AND DISEASE OF THE UTERINE APPENDAGES.**—Endometritis as an essential factor in the production of abortion has already been laid stress on when speaking of syphilis. Whatever the cause of the endometric inflammation, the result is the same—a morbid soil for the ovum. Each succeeding miscarriage simply makes matters worse; for an abortion to the lay mind is a simple affair. The average woman goes about her daily tasks as though an abnormal process were not occurring. The result is subinvolution and, later, hyperplasia. Only when the physician steps in can there be hope of

limitation of the process. He will tell her that an abortion requires rest in bed, even as labor at full term does; he, if of progressive mind and free from deep-rooted prejudice in favor of old-time methods, will see that the uterus is perfectly emptied of all trace of ovum and secundines; and, finally, he will not hesitate to make those applications to the endometrium from whose use the bearing of children to term may become possible. As for disease of the uterine appendages, if it be bi-lateral, sterility will result; if one-sided, however, such is the intimate connection between the mucous lining of the uterus and tube that, granting the advent of a healthy ovum to the uterus, it may find the endometrium in a state of inflammation derived through contiguity of surface. The result here, then, will be the same as regards the continuation of pregnancy as though the uterine endometrium were primarily affected.

The treatment applicable to endometritis is as laid down in most works on gynecology. Energetic, prolonged applications of the compound tincture of iodine, carbolic acid, nitric acid, scarifications, according to the preference of the physician and according to special indications. The hot vaginal douche and general medication naturally are indicated.

**UTERINE DISPLACEMENTS.**—Anterior displacements are so rarely factors in producing miscarriage that they need no reference here. Of the retro-displacements, version, if of the third degree, will almost always be accompanied by sterility, because, the cervix lying behind the symphysis, the male organ cannot impinge on it, but seeks the posterior cul-de-sac and there deposits the semen; if of a lesser degree, the woman may conceive, and then the impregnated uterus will either rise or become a retroflexion. In this condition matters are different, and miscarriage here may be due to one of two causes. If the flexion be of recent date, on conception ensuing, the course of gestation may go on smoothly till the third month, at which time the uterus can no longer expand in the true pelvis, and must rise above the brim for further development. This, from its retroflexed state, it may not be able to do. Its futile endeavors become a source of irritation, and it contracts on the ovum and expels it. In the other case—where the flexion is of long standing—a further factor is introduced. A retroflexed uterus soon becomes a congested uterus; this congestion before long

passes into a hyperplasia; conception ensuing, the ovum finds a congested, hyperplastic endometrium to develop in, and should it succeed in accomplishing this, it may be only to be expelled when the uterus is obliged to rise above the brim.

The treatment indicated is simple enough if properly and understandingly applied. A uterus displaced anteriorly, when fecundated, can best be held in place by an abdominal supporter. Simple retroversion calls for an Albert Smith pessary. It is the retroflexion that is apt to give trouble. If, by putting the patient in the knee-chest position, the uterus is with ease replaceable, the fundus will remain above the brim where gestation has advanced to the fourth month. If not, a pessary is to be introduced. Ordinarily this will answer, but exceptionally the fundus will simply flex over the posterior bar of the pessary. In such a case, a Cutter may yield better success. If this fails, the patient must keep her bed, lying alternately on her side and abdomen till the fourth month has passed. Rarely will such a radical measure be required for more than a fortnight. Where hyperplasia exists, proper endometric applications should be used conjointly with the pessary in the non-gravid intervals.

CHRONIC CELLULITIS AND PERITONITIS.—It is clearly apparent how these factors may lead to miscarriage. The uterus being bound down by adhesions of greater or less extent, when in the course of gestation it must rise, the adhesions will have to give or else the ovum will be expelled. Not uncommonly, also, the uterus will be retroflexed, so that a further factor in the etiology of miscarriage is introduced. Often sterility is the result of these conditions, since the ovaries, and the tubes as well, may be enveloped by the plastic exudation, and hence are unable to properly functionate. Should they functionate, however, what more likely than that the ovum, the outcome of a source in an inflamed condition, should itself partake of the same condition, and hence lack elements necessary to its vitality? Under this heading, as having the same effect, should be simply mentioned the adhesions to the abdominal walls following an ovariectomy.

The treatment of these conditions is, in its results, rarely satisfactory. Whilst we possess means powerful in causing absorption of plastic material, we are, unfortunately, unable to reach



the whole of it. The best which our art yet offers is frequent applications of tincture of iodine to the vaginal vault, followed by tampons saturated in glycerin, by means of which, in course of time, we may hope to stretch and break down the adhesions. At times cautious, tentative efforts at uterine replacement should be made. The hot vaginal and rectal douche will assist the absorption of the plastic exudation.

LACERATION OF THE CERVIX.—The data as regards the influence of this factor in the production of abortion is not very exact. The usual result of the lesion is, as might be expected, sterility. It is perhaps impossible to do more than infer that laceration of the cervix may be a cause; for it is to be borne in mind that the laceration itself brings in its train many evils, any one of which is sufficient to cause miscarriage—such as inflammation of the cervical and corporeal endometrium; subinvolution, cellulitis. Emmet, from his elaborate statistical tables (“Principles and Practice of Gynecology”), was enabled simply to draw the conclusion that by far the larger proportion of women remain sterile after the receipt of the lesion. Ely Van de Warker, in a paper on the Repair of Lacerations of the Cervix Uteri (AM. JOURN. OBSTET., July, 1833), makes no attempt to draw any deduction as to the influence of the lesion in causing miscarriage. He shows, however, conclusively its influence on sterility. He says (p. 688), “if we were to include abortions among the pregnancies occurring during the existence of laceration, we should have a better showing in favor of the operation *as a cure for sterility and abortion.*” (Italics mine.) Obviously, therefore, he tacitly admits that laceration may be a cause of abortion. At a recent meeting of the Obstetrical Society of Philadelphia (Feb. 1st, 1883), Dr. B. F. Baer gave an extended analysis of twenty-seven cases of trachelorrhaphy, with the object in view of determining the effect of the lesion on sterility and labor. “In eight cases pregnancy had occurred within five years, but had resulted in abortion in five.” In twelve out of twenty-one cases “from one to five abortions had occurred in each subsequently to the occurrence of the laceration;” and further he says, “in more recent cases, for the cure of subinvolution, abortion and sterility, the operation is an immense stride” over the old method of cauterizing, etc. The following case, somewhat abridged, taken from Baer’s valuable

paper, offers strong evidence in favor of the point I wish to make—that laceration of the cervix deserves place as a factor in the etiology of habitual miscarriage.

M., æt. 30, was first seen in January, 1881. Two years before had her first child. Labor was rapid, convalescence good. Ten months after, again pregnant. Aborted between second and third month. In three months, again pregnant; aborted at about the same time. Similarly in six months, the same sequence. The patient and husband were free from syphilis. The uterus was in normal position, not enlarged; the cervix was lacerated on the left down to the vagina. The fibres of the internal os were apparently involved. There was no eversion, no metro or menorrhagia. Nevertheless, the connection of cause and effect seemed so evident, that an operation was advised and performed. Three months after the operation she again aborted. A little more than one year after, she went to term and was delivered of a healthy male child. There was no re-laceration.

From a thorough consideration of the facts at disposal, the inference is fair, that if impregnation occur in a uterus whose cervix is lacerated, the chances are greater for miscarriage than against.

The treatment lies in the repair of the rent, not neglecting, of course, associated conditions.

INTERMITTENT FEVER.—The facts in regard to the influence of this cause on the continuation of pregnancy are very few; still, what I have been able to collect lead me to the opinion that a woman, the victim of malarial fever, very probably will miscarry. Lusk (loc. cit., p. 254) says, “malarial fever does not produce abortion except in rare instances.” Playfair (loc. cit., p. 224) says that in malarial districts the occurrence of enlarged spleens in mere infants is often observed, and hence argues that the occurrence of the disease during intrauterine life must be very common. Cazeaux (loc. cit., p. 445) says “there can be no doubt that, as M. Ebrard has endeavored to prove, the grave disorders and perturbations produced throughout the economy by the febrile paroxysms, the obstinate vomitings which attended many of them, and the cough, diarrhea, and colic, may disturb greatly the functions of the womb; also that the fluxion and congestion so often produced by this fever may cause the premature expulsion of the product of conception.” Leopold (loc. cit., p. 252) quotes a case of Krieger’s:

The patient, free from syphilis, as also her husband, had been for a long time under treatment for enlarged spleen. She gave birth to a living child in 1855, which died in a few weeks of a cellulitis of the neck; again, in the following year, a living child, which died in two weeks of icterus. In the following pregnancy (1858) the patient had extensive dropsy of the lower extremities, and was confined prematurely at the eighth month of an asphyxiated fetus. By the next pregnancy (1860), a fetus three weeks too early, dead and dropsical, with enormous hypertrophy of the kidneys. The placenta in both these cases was degenerated to a mole. As a cause of these premature births, Krieger could find nothing except an intermittent fever with its characteristic splenic tumor.

This case is not very valuable proof, seeing that co-incidentally with the malarial cachexia, the patient was in a very reduced condition. Anemia, hence, may just as likely have been at the basis of her miscarriages. All that can be said, therefore, is that a woman, suffering from malarial fever, may abort, either as the result of the fever, or else from the accompanying anemia. That the fetus may be infected is undoubted. The increased temperature to which it is subjected, may, obviously, be the cause of its death.

The treatment must be the same as though the patient were not pregnant. There does not appear to be the slightest reason to suppose that quinine will induce miscarriage. Whatever oxytocic action the drug has, must be very slight. I have several times had occasion to give it in from ten to fifteen grain doses almost daily for months, and have never yet seen any but good effects.

**CHOREA.**—The relation existing between chorea and habitual miscarriage is somewhat more definite. Schroeder ("Manual of Midwifery," p. 115) says: "Chorea is relatively a frequent complication of pregnancy. It occurs very easily in those pregnant women who have suffered from chorea in infancy, and it may then recur in successive pregnancies." Playfair (loc. cit., p. 198): "Chorea is not infrequently observed (during pregnancy), and forms a serious complication. In a large proportion of cases, the patient has already suffered from the disease before marriage. On the occurrence of pregnancy, the disposition to the disease again becomes evoked, and choreic movements are re-established. . . . It has also an unquestionable tendency to bring on abortion or premature



labor, and in most cases the life of the child is sacrificed." Lusk (loc. cit., p. 262): "Abortion and premature delivery due to the repeated succussion of the uterus, are of very frequent occurrence. Chorea exerts a prejudicial influence upon the course of pregnancy, having interrupted it in about one-half the recorded cases. Barnes (Trans. Obstet. Soc., London, X.) collected fifty-six cases, and in seventeen the mother died. These extracts might be multiplied, but they are sufficient to prove the pernicious influence which chorea may have on pregnancy. Doubtless a partial explanation of its action is succussion of the uterus; it is not unlikely, however, that the associated anemia enters as a factor.

The treatment indicated necessarily will not vary from that in use where pregnancy does not exist. Iron, to counteract the anemia; arsenic, from its supposed specific action; bromide, chloroform, ether, to control spasm; and finally, if the mother's life be endangered, the induction of labor.

**BRIGHT'S DISEASE.**—As might be expected, disease of the kidneys is a marked factor in the production of miscarriage. I am not referring to those cases where albuminuria occurs during pregnancy, leading in the later months to premature labor, either from eclampsia, or because such is forced on the accoucheur. It is particularly where the gravid state supervenes on an already existing albuminuria of organic origin that the prognosis as regards the continuation of pregnancy becomes grave. In such a case miscarriage is often the rule. And no wonder, when the altered state of the mother's blood is remembered. The fetal nutrition must suffer, and the death of the fetus soon leads to its expulsion. Tanner ("Signs and Diseases of Pregnancy," p. 428) had as patients seven women suffering from Bright's, and of these four miscarried, one three successive times.

The best part of the treatment must be the prevention of conception. Patients suffering from chronic Bright's, particularly the parenchymatous form, had best, where possible, be dissuaded from marriage; in case of marriage they ought to use means for the prevention of conception, since they are not fitted for the function. Whilst they might go to term, it is questionable whether their own health would not deteriorate. The extra burden imposed by pregnancy cannot but

have an unfavorable effect on the mother's health. Should she escape miscarriage, the child, though born alive, if it do not inherit its mother's disease, certainly stands small chance of good health. In short, morbus Brightii patients are of the class that had best not marry. With the increased diffusion of preventive medicine, the day may come when this fact will obtain clearer recognition than it does to-day.

**TUMORS.**—These may act in two ways: either proving sources of irritation to the uterus, or else, by preventing the proper development of the uterus. It is not every tumor which interferes with the course of pregnancy. Many are causes of sterility; many only appear as hindrances to delivery; many in no wise affect gestation. Of fibroid tumors, it is the submucous and interstitial which are most apt to cause abortion, as their presence interferes with the necessary growth of the uterus; those also which are pediculated from the cervix are sources of irritation and may thus, particularly in the early months, interrupt gestation. Epithelioma, if far advanced, will cause sterility; if in an early stage, it may interrupt pregnancy, either by the irritation it causes, or else, by binding the uterus down through ulceration, will prevent its ascent.

The treatment, during pregnancy, must be limited to the removal of small fibroids pediculated from the cervix, unless some symptoms from the side of the mother supervene fraught with danger to her. In the intervals between conceptions, that surgical treatment required by each tumor is indicated. It will be good advice to caution patients suffering from the submucous or interstitial varieties of fibroids, as well as carcinoma, against conception.

**LEAD-POISONING.**—This is not an uncommon cause of miscarriage, likely to hold as long as the woman is under the noxious influence of the metal. The rationale of its action must be looked for in the anemia, often of pernicious type, which accompanies long exposure. The toxic effects may also act directly on the fetus. In Cazeaux's text-book (p. 458), M. Tarnier makes reference to some interesting cases which may well be reproduced here. "Dr. Paul (*Arch. générales de Méd.*, 1860) made a study of the effects of this action (abortion from lead), during gestation. In 1859, he observed the case of a woman who had been three times safely delivered before being ex-

posed to the influence of lead; and who, afterwards, out of ten pregnancies had eight miscarriages, one child still-born, and one delivered at term, but which died five months afterwards." This woman told Paul that many of her companions in the workshop miscarried or could not raise their children. He then undertook a series of observations with the object of determining the extent of the influence of lead. In eighty-one women, the poison showed itself, either in the death of the fetus or in its premature expulsion at from three to six months. Four of these women afforded a series of fifteen pregnancies, in which there were ten abortions, two premature labors, one still-born child, one which died in twenty-four hours, and one which survived. Another series of cases showed that the fetus might die without the mother presenting any signs of toxic influence. Altogether "out of one hundred and twenty-three pregnancies, there were sixty-four abortions, four premature labors, five still-born children, twenty which died within the first year," and, of the remainder, only fourteen reached ages beyond three years. These figures are significant and warn us always to inquire into the occupation of our patient in an obscure case.

The treatment lies in the removal of the cause. The woman, if she desires to bear children, must give up her occupation, and then, perhaps, after a long course of iodide of potass and tonics, her wish may be fulfilled.

REFLEX CONDITIONS.—Obviously, transient causes of miscarriage are entitled to no place in my paper. Because they act once, is no reason why they should act again. Blows, sudden shocks, the essential fevers, are all strong factors, and should they occur repeatedly, it would simply be a coincidence. As a final cause, however, those reflex conditions must be considered which have their outcome either from the nervous system in general or from the uterus and its appendages in particular. There are some women so delicately nurtured, so highly impressionable, as to react to the slightest nerve stimulus. Like hot-house plants, they must be watched and tended, lest the slightest influence, outside of their accustomed habitat, affect them unfavorably. Gestation with them is often toxic. The uterus repels the impregnated ovum, as it would a foreign body. It may be an excess in the nausea peculiar to the early months of pregnancy; it may be an uncontrollable temper—some



such cause may in certain women bring about miscarriage. An ill-assorted marriage, if it do not lead to sterility, will often declare itself in repeated miscarriages; also the union of the old with the very young, and *vice versa*; and again close interbreeding will have the same effect. Cases where a highly wrought nervous system is at fault evidently have little rational treatment. An inherited or acquired organization is to blame. All that can be accomplished is through toning up or depressing the nervous system, according to indication, directing towards other parts the excess of blood or nervous force limited to one part, through massage, ordering change of air and scene. As for miscarriage dependent on ill-assorted marriage and the like our hope lies in the not distant future, when prevention will grow in favor, and much of the medical art will be merged in the preventive.

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## TWO CASES OF PUERPERAL ECLAMPSIA TREATED WITH PILOCARPINE.

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BY

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IN a paper on Puerperal Eclampsia in the *Lancet* of 1880, I endeavored to show that, while the pregnant and parturient states in no way prevented the occurrence of eclampsia from other causes, in the great majority of cases the convulsions were merely symptomatic of kidney disease, and therefore that our treatment should be chiefly directed to the relief of those organs, modified, of course, to suit the special conditions of the case, as chloroform is generally indicated to prevent the action of the voluntary muscles, and possibly for other reasons; and that it is frequently useful to continue narcotics by the use of chloral, but that our principal aim should be to restore the functions of the kidneys, and for this purpose wet cupping and poultices should be applied over the loins, and diuretics exhibited, such as digitalis and the spirit of nitrous ether, and that in most cases these must be supplemented by purgation

and diaphoresis. The experience of the last three years has greatly strengthened me in the views then expressed, and as pilocarpine has a very rapid and efficient action as a diaphoretic, and, as it can easily be used whether the patient is comatose or not, I am inclined to think that it may often be of much service in the treatment of kidney mischief during the periods mentioned, as by its use we can at once relieve the system, reduce arterial tension, and give the diuretics time to act, and though the treatment is by no means new, having been tried by Bidder as far back as 1872, still, as it has not been very often used, the notes of the following cases may be of interest.

CASE I.—On the 6th of June of the present year, I was asked by Mr. Morgan, Senior Surgeon to the Sunderland General Infirmary, to see with him a lady in her seventh month of pregnancy, who had been seized with convulsions the previous day, and had had eight convulsions before I saw her. On examination I found her ankles and hands swollen, and her eyelids puffy, and I learned that this condition had existed for three weeks, and that she had also complained of headache, giddiness, and dimness of vision, and had occasionally vomited during that time; that her urine had been high-colored and scanty for a month, and during the preceding twenty-four hours she had only passed the amount shown to me, which on being measured proved to be scarcely nine ounces and a half; during my visit she had a typical convulsion, her ninth, and though fairly conscious before, she now became quite unconscious for several minutes, and then continued in a dazed, semi-conscious condition. An enema of castor oil and turpentine was at once administered, but as it brought but little away with it, sixty grains of compound jalap powder (British Pharmacopœia) and six grains of calomel were given, and a mixture of infusion of digitalis, spirit of nitrous ether, and solution of acetate of ammonia was prescribed, with the application of a large linseed-meal poultice over the kidneys. The urine was taken for further examination and submitted for analysis to my colleague, Dr. Beason, Professor of Chemistry at the University of Durham, who reported as follows: The urine was of a dark-red-dish color and very fetid; specific gravity 1035; reaction neutral; it contains 25 per cent by bulk of albumen, and 1.97 per cent of urea; quantity, nine ounces and three drachms. On microscopical examination, I found it to contain urates, a very few casts, and some blood-corpuscles and some scales of epithelium. Now, healthy urine we may look upon as containing on an average 2.5 per cent of urea, and taking fifty ounces of urine as the daily average, it may be stated roughly that the amount of urine passed was reduced by four-fifths, and that of urea by five-sixths.

Next morning (June 7th) she was worse, and could scarcely be

roused to consciousness, and had vomited powder, medicine, and indeed everything she took; not even iced milk and soda-water—the only food given to her—would remain on her stomach; the bowels had not acted, though a drop of croton oil had been given the previous evening, and she had now had twenty-two convulsions. The propriety of inducing labor, of which there was no symptom, was carefully considered, but Mr. Morgan and I decided against it, fearing that it would not only increase the severity of the fits, but also speedily lead to a fatal termination; so the poultices and diuretics were continued and two drops of croton oil administered, and chloroform was given occasionally during the day; by four in the evening matters were still getting worse, though there had been a copious evacuation of the bowels two hours previously, and the number of convulsions had now reached thirty-one. She had passed no urine since the morning, and for the previous twenty-four hours the amount was under eight ounces, and in character was similar to that examined at first.

It was then decided to use pilocarpine, and accordingly a third of a grain was injected beneath the skin of the arm; the introduction of the needle had the effect of rousing her a little, and she at once smacked her lips, complained of a feeling of dryness in her throat, and within four minutes was in a profuse perspiration, which continued for several hours. She had a slight convulsion at ten P.M., and another at six A.M. next morning, which was the last convulsion she had (in all thirty-three), and by eleven A.M. she was quite conscious, and expressed herself as feeling very much better. A third of a grain of pilocarpine was then administered, with a similar result as on the previous day, and the diuretics were continued. Urine passed during the preceding twenty-four hours, twelve and one-half ounces.

Next morning (June 8th) she had passed twenty ounces of urine, had vomited only twice, and expressed herself as feeling quite well. A fourth of a grain of pilocarpine was administered, the diuretics continued, and the food still confined to soda-water and milk. Not to be tedious with minute details, suffice it to say no more pilocarpine was used, but the diuretic mixture was continued for a fortnight, being then altered by the substitution of the tincture of the perchloride of iron for the digitalis and acetate of ammonia, which was persevered in for some weeks longer, and the food was restricted to milk alone for the first fortnight, after which farinaceous food was given in addition, and to this she was confined for the rest of her pregnancy; the albumen gradually diminished and the urea increased, but the urine did not become normal till three weeks after her labor, which took place on the 15th of August, and presented nothing abnormal, mother and child doing well, and continue so (October 13th).

This case is of interest from the fact of the woman's giving birth to a living child at term, after having had thirty-three



convulsions during the seventh month of her pregnancy. The pilocarpine rapidly lowered arterial tension, produced profuse sweating, relieved the system, and helped to restore the functions of the kidneys, while it had no depressing effect on the patient, nor did it in any way hasten labor.

CASE II.—In the second case in which I used pilocarpine, I only saw the patient twice, so therefore cannot give such complete details as might be desired. She also was a patient of Mr. Morgan, æt. 38, tenth pregnancy, and supposed to be within a week of term. She was quite comatose when I saw her, could not be roused in the least, and had had nine convulsions during the preceding twelve hours; there was only an ounce of urine in the bladder, and it contained more than half of its bulk of albumen. Pilocarpine was administered, a third of a grain every six hours. Labor came on, and terminated rapidly with the birth of a dead fetus. The mother made an excellent recovery.

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#### INFLAMMATION AND ABSCESS OF THE BREAST DURING LACTATION.

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BY

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It is not from any special fitness that I invite attention to the subject under discussion, nor is it with the expectation of suggesting anything particularly original; but it is simply my desire to present a general review of the subject of the inflammatory diseases of the breast which occur during pregnancy and lactation, in order to attract notice to this much neglected organ and its ailments. In reading the average text-book on obstetrics and diseases of women, one will be surprised and dissatisfied with the brief article and general remarks upon the care and treatment of these affections, and yet it is a subject that is worthy of our profoundest thought, and should not be relegated to the domain of incompetent, meddlesome, or conceited nurses, or friends of the patient. Again, upon the healthfulness of the breast depends not only the

future health of the mother, but the health and life of her offspring. Too often are valuable lives sacrificed, or started on life's voyage in an unseaworthy vessel, that is certain to founder ere it is scarcely under way; simply because the breasts during pregnancy and lactation were improperly cared for, and as a consequence, the mother could not nurse her infant, but was obliged to resort to unnatural methods of feeding, which sooner or later resulted in evil consequences. In private practice among the better class, one does not have the difficulty which superstition or lack of intelligence in the poorer classes cause, in obstructing our well-intended efforts and advice; hence, inflammation or abscess of the breast is a much more frequent concomitant of pregnancy or lactation in the latter class, or dispensary patrons who have had no previous care, than in the former.

I must ask indulgence, therefore, if the importance of the subject discussed in this paper appears to be overdrawn, as my experience with these disorders has been considerable, though principally in dispensary practice, where these afflicted patients can be seen almost daily, suffering intensely from their inflamed breasts. It is not necessary to relate here the various cases seen or treated, for the history of each class or sub-division of these diseases is much the same; but such points as are considered of value, and which were gained by practical experience, in my own practice, or that of others, will be worked into this article.

*Etiology.*—The causes of inflammation of the breast may be considered under three heads, as follows: *first*, the mother; *second*, the child; *third*, miscellaneous.

I. As it is the stimulus of pregnancy which determines the evolution of the mammary gland with the development of its functional activity, we must consider this condition as one of the primary causes of inflammation of the breast; especially if the patient be a primipara, or if she has not gone to full time, but miscarried. Inflammation following an abortion, however, is so infrequent, that it need scarcely be mentioned as a cause.

II. As, “during the period of its fullest physiological bloom, *i. e.*, during lactation, variations in the degree of functional activity normally take place; moreover, as the same gland may

contain lobules which are comparatively at rest, and others, which are at the full height of activity," we must also consider this unequal vascular condition and exalted activity as an important factor in causing the disorders which we are now studying.

III. Previous inflammation of the breast from scarlatina or former lactation, or anything which may have produced general constitutional debility or disturbance; such as scrofulous or tubercular diseases, syphilis, malaria, marked anemia, puerperal fever, or septicemia, exposure to cold, emotional (?) influences, etc.

IV. Small or retracted nipples, whether due to natural or other causes, and erosions or fissures of the nipple. There can be no question but that erosions, ulcers, and fissures of the nipples, are very prominent, though indirect causes of mastitis. For in persons of untidy habits, or who are careless about washing the breast after nursing, these channels quickly convey septic material from their hands, the lochia, or other source, to the lymphatics of the mammary gland, and thus set up not only inflammation of the breast, but a general lymphadenitis, similar to that in other parts of the body.

The German, as well as the leading American authorities, consider this to be not only the most frequent, but the principal cause of mastitis; hence they urge the early use of antiseptics, to insure rapid healing. These ulcers and fissures are generally "caused by the constant oozing of an excessive flow of milk (galactorrhea), which causes a maceration of the epithelium upon the nipple," when it becomes loosened by the child's nursing very hard, or too frequently, and then small vesicles and erosions make their appearance, to be followed by fissures. These may be so small as hardly to be noticed at first; but they are to be suspected if the mother complains of much pain when the child takes the nipple.

V. The principal causes due to the child are, too frequent nursing, an unusually vigorous child with an excessive appetite, or late weaning. On the other hand, the too infrequent nursing by an indifferent mother may also be an exciting cause of mastitis, by not relieving the milk ducts at proper intervals.

VI. Another *possible* cause is, "if the child be suffering from



sprue, the transfer of the *oïdium albicans* imparts to the wound of the nipple an aphthous character," which may set up inflammation of the superficial fascia, or even extend to the gland itself.

VII. To my mind, one of the most active causes of inflammation or abscess of the breast, outside of maternal causes, is the frequent use of that *barbarous* instrument, the *breast pump*. It is just about as sensible to apply a dry cupping-glass to a boil, with the expectation of dispersing it, as it is to apply the ordinary large-mouth breast pump to a highly engorged and exceedingly painful breast, and then expect to get relief, and not add fuel to the fire of impending inflammation.

Playfair, in his excellent work on obstetrics, says, breast pumps and similar contrivances only irritate the breasts, and do more harm than good. However, there are some pumps so called which have but a small opening, somewhat similar to a "nipple shield," with a tube, mouth-piece, and milk receiver attached, to be used by the mother; these act more kindly and efficiently. The pumps in general use have very wide mouths which suck in a large portion of the breast and contract the tissues about the ducts, thus aggravating the trouble, with but little relief in lessening the quantity of milk in the breast. I recall here the exploits of my early boyhood, while living in the country. I often had to help milk the cows, and in order to save time, as well as fatigue, I would introduce a small straw in the one orifice of the cow's teat, when, forthwith, a rapid, easy flow of milk would take place. If it were not for the numerous small-sized orifices of the milk-ducts in the female nipple, small blunt-pointed gold or aluminium tubes or trocars, similar to a hypodermic needle, might, with care, be used in women with a similar effect.

VIII. Finally, *trauma*, whether from the bite of the teeth or the scratch of the child's finger nails, and injuries from whatever source, all add to the causes previously mentioned, in setting up inflammation about the mamma.

*Classification.*—Inflammation and abscess of the breast, as it occurs in nursing women, may be divided into three groups, according to the part affected, as the superficial or subcutaneous areolar tissue, the parenchyma of the breast, or in the deep fascia between the gland structure and the pectoral muscles, viz.:

I. *Epiglandular Inflammation, or Supramammary Abscess;*

II. *Parenchymatous Inflammation, or Mammary Abscess;*  
and

III. *Subglandular Inflammation, or Submammary Abscess.*

Although the inflammation generally affects these different parts, often the whole of the breast becomes involved, and no distinct implication of any special tissue can be made out. Still, it is desirable, when possible, to differentiate between them, in order that we may the more clearly read the symptoms of each, and thus employ intelligently the proper treatment, which varies somewhat for each locality. I have met with each variety of inflammation and abscess in the mammary region, and, in my own experience, as well as that of others, the supramammary is found to be the most frequent, and the parenchymatous the most serious, obstinate, and painful.

*Symptoms.*—The objective and subjective symptoms of these affections are very apparent, and yet, unless we have a clear understanding of them, it will be difficult, in some cases, to determine the point of origin, or principal location of the inflammation or abscess, until after free suppuration has set in. The first symptoms common to each variety are congestion or marked turgescence of the parts, with considerable tenderness and “dragging pain,” appearing about the third day after confinement, or when the secretion of milk first commences. These may be followed by a slight rise of temperature, which, in the average patient, is about two degrees. If the parts be normal, and the child nurses properly, this slight disturbance may continue two or three days, then subside, and lactation go on without further difficulty. If such should not be the case, and there be any constitutional dyscrasia, the mammary tissues rapidly pass into an inflammatory state, to be followed, perhaps, by an abscess. The right breast is more frequently attacked than the left; but both glands may, under certain conditions, become affected, when all the symptoms are very much aggravated. When the inflammation continues, and suppuration supervenes, the patient suffers most intensely from pains and rigors, followed by a high fever and perspiration, which, in some instances, *has been taken for* an intercurrent attack of *malaria* or *remittent fever*. In the *periglandular* or subcutaneous variety, the symptoms are not so

severe, as a rule, and if the inflammation does not extend to the gland structure, suppuration soon occurs, the abscess breaks through the skin in a few days, and heals up in from one to three weeks, without, in most instances, preventing the process of lactation. It is this variety which mostly originates in a fissure or ulcer of the nipple, or areola, or one of its numerous sebaceous follicles, and gradually extends to the lymphatics, subcutaneous fascia, or lactiferous ducts. The *glandular* variety is always ushered in with a rigor, followed by sharp lancinating pains and great heat in the breast. If only a part of the gland be affected, circumscribed nodular enlargements can be felt throughout the mamma; but when the whole gland is affected, only a large irregular mass can be made out through the tense superficial structures. As the inflammation advances to suppuration, the secretion of milk is arrested in the affected lobules the tense, angry-looking skin assumes a dusky hue, becomes glazed, has a peculiar greasy appearance and doughy feel, and pits on pressure.

When pus has formed, the tension of the superficial parts, with edema, which is greatest in this variety, and deep-seated, but difficult fluctuation, determine its presence. When several foci of inflammation exist in separate lobules, they may suppurate in succession, so that abscess after abscess may develop, and the morbid condition be protracted for weeks, and even months.

When these break spontaneously, at points unfavorable for the discharge of pus, fistulous tracts are left, which take on "waxy degeneration," become chronic, and are very difficult to heal. As a result of this long-continued suppuration and necrosis of tissue, entire lobes may disappear, blood-vessels may become eroded, from which *fatal hemorrhage* has been known to occur, and, with the access of poisonous and retained air, septicemia may set in, from which death will often result. Finally, if a large milk duct be perforated, milk, mixed with pus, will escape, and if the abscess open externally, a milk fistula will occur which will be very difficult to heal before lactation ceases.

The *submammary* variety is very rare, and when inflammation occurs in this loose areolar tissue, it diffuses itself beneath the gland structure and invariably runs into an abscess with great



rapidity. "This rare condition owes its origin, according to Billroth, in most, if not in all cases, to abscess formation in the deep-lying glandular structures, the pus perforating the fasciæ beneath the gland." (Lusk.)

The pain is of a deep, heavy, throbbing character, which is increased by moving the arm or shoulder, as the inflammation extends to the axillary glands. The breast becomes prominent, is conical, and the whole organ is projected forward by the pressure from behind. It may or may not be readily movable upon the pectoral muscle.

Owing to the depth at which the pus forms, it is very difficult, in the early stages, to detect fluctuation, until it approaches the surface. The abscess at last points at the lower margin of the gland; but if suppuration has been profuse, the pus may extend to the circumference of the gland, or beyond. "Stoltz is said to have removed from such a sac twenty ounces of pus." (Lusk.)

*Treatment.*—The treatment of inflammation and abscess of the breast is both *preventive* and *curative*, and will be so considered in this article.

*Preventive.*—When we are engaged to attend a patient in confinement, our first act, after inquiring about her general health and bodily functions, should be to *examine* as to the *condition* of her *breasts* and *nipples*.

In a *primipara*, this should *never be omitted*, while in a *multipara* an examination is not so important, unless a history of difficulty during former pregnancies or lactation be given.

If the nipples are found to be diseased, small, or retracted, advice pertinent to the case should be given. During the last month of gestation, it is advisable to prescribe for daily use a mild alcoholic or astringent lotion for the purpose of hardening the tissues about the nipple, which in some persons may be very delicate and easily abraded.

Almost any astringent will answer for this, such as solutions of alum, tannin, lead, etc.; but I prefer for general use the glycerite of tannic acid, or tannin with spiritus myrciæ (bay rum), or eau de Cologne. A common household remedy, of a similar nature, is made from black or green tea and brandy. If the nipples are retracted or small, the patient must remove all pressure by clothing or corsets, and then, every night and

morning, anoint them with camphorated oil or vaseline, at the same time gently drawing the nipple out with the fingers. Country people often use for this purpose a "pair of small black bottle necks" which have been ground smooth on the under (or broken) side. One is placed over each nipple, and held in place by the clothing; these may be worn before or after the birth of the child, as desirable. After the birth of the child, we can apply it to the breast, with a fair prospect of increasing the length of the nipple; but if this fails, we can then try a bottle in which a partial vacuum has been made by means of hot water, or else one of the small nipple shields having a tube and milk receiver attached, and which is intended to be used by the mother.

As soon as the milk makes its appearance, we should *personally supervise the first attempt at nursing*, and give directions as to the importance of its regularity and frequency. It is well to have the mammæ supported by a well-fitting sling, especially if there be much engorgement and tenderness. This will aid greatly in preventing vascular congestion. If there be much congestion, soothing liniments, with gentle friction of the gland, from the base to the nipple, will help in relieving it.

The astringent lotions may still be continued, and particularly the alcoholic, for they are both cooling and antiseptic. All crusts or epithelial scales, which may obstruct the orifices of the milk-ducts, as well as dry or sour milk which may have remained upon the nipple after nursing, should be washed off (after each application of the child to the breast) with a warm solution of soda biborate or bicarbonate.

When the breasts become very full of milk, owing to the death of the child, or a weak infant, I have found a new clay pipe, with a long stem and smooth bowl, well oiled, a safe instrument to draw or start the milk, or even to empty the breast.

With it, or the tube and nipple shield already mentioned, the mother can draw her own milk much safer than with a "breast pump." As a last resort, we may substitute another baby, the patient's husband, nurse, or even a young puppy.

If for any reason it becomes necessary to arrest the secretion of milk, in part or wholly, remedies which appear to have a

specific action in this respect should be given, such as the internal administration of strong saline laxatives, potassium iodide, belladonna, ergot, etc. Potassium iodide is very highly extolled for this purpose. Externally, I have found the use of an ointment composed of ungt. belladonnæ and ungt. plumbi iodidi, equal parts, to be an excellent resolvent in arresting superfluous secretion or promoting the absorption of indurated lobules or glands.

*Curative.*—Presuming we have been called to see a case that has passed into the stage of inflammation, or that we have been unable to prevent suppuration in the one that we have attended from confinement, we may use or continue such treatment, already outlined, as appears suitable to the existing condition. In plethoric persons, general or local blood-letting may also be very useful in arresting the secretion of milk or stage of inflammation. Every obstetrician must be aware of the rapid failure of milk in a mother who has had “post-partum” or other hemorrhage, at or near her confinement.

In galactorrhea, unless irritation of the nipple or breast follow, we have an effective aid in diminishing the congestion. If there be but little milk, and the constant oozing causes fissures or ulcers, this should be stopped by giving ergot internally, and applying tinct. benzoin co. or collodion, over the nipple between the nursing periods. Ulcers and fissures of the nipple are apparently trivial affections; but when we witness the excruciating pain which the mother suffers while nursing her infant, and its accompanying worry and fever, and then recollect that they furnish the starting-point of most cases of mammary abscess, it behooves us to give them our closest attention.

As one great obstacle to the healing process is the nursing and biting of the child, the nipple should be protected during the act by one of the small shields invented for this purpose. Unfortunately, the child can rarely be induced to nurse properly through it, and then we must try the pipe or tube previously mentioned. If only one nipple be affected, and the quantity of milk not abundant, the child should be allowed to nurse upon the sound side only, for a period of twenty-four hours. When the infant is suffering from aphthæ, appropriate treatment should, of course, be given.

The ulcers or fissures about the nipple are to be touched



with a stick of silver nitrate which, in itself, is an excellent antiseptic, and then apply over it tinct. benzoin co. or colloidion, or even salicylic or boracic acid in ungt. zinc. benzoat. If the fissures are so situated that antiseptic adhesive plaster can be applied, healing will take place more rapidly under its early use. When the *inflammation* gives evidence of being *severe* and *prolonged*, the child must be removed from the breast, and the *patient required to remain in bed until well over the acute stage*. With the patient in bed, the parts can be more thoroughly at rest and elevated, thus preventing much of the irritation and congestion. Poultices of *spongiopiline* and *hot water*, ground flaxseed and chamomile, or other favorite substances, must be applied *constantly*, taking care that the breast is not exposed or chilled while changing them. Camphorated oil applied underneath the poultice will prevent this to a certain extent.

If there be much local inflammation or pain in the integument, a solution of plumbi subacetatis, with or without opium, may be applied upon the surface of each poultice.

Equalized methodical compression, with moistened absorbent cotton, soft sponges, or circular *elastic* adhesive plaster, is also useful where poultices cannot be properly applied, in preventing the inflammation or causing absorption of the indurated tissues. Dr. W. G. Wylie advises the application of *fly-blisters* to the breast, and reports great success from their use in *aborting* mastitis. The foregoing measures, with internal anti-phlogistic remedies, such as the salts of potash, or aconite, *quinine*, and *ferric chloride*, will in most cases *abort* or resolve the inflammation in a few days or a week.

*Abscess*.—If, after all, suppuration ensues, and an abscess forms, we then have to contend with the exhausted and agonizing condition of the patient, as well as her fears of the knife or lancet, and resolve in our minds the question, when and where to open the abscess. There exists among physicians a great difference of opinion about the propriety of opening a mammary abscess; some believing it to be the best practice to let the breast alone, and leave the operation to nature; while others advocate an *early operation*, as *soon as pus can certainly be detected*. I hold to the latter view, unless good reasons to the contrary exist, for by an early incision

we shorten greatly the stage of suffering and convalescence of our patient, besides preventing the burrowing and extension of the abscess, with its resulting and numerous fistulæ. In dispensary practice the truth of this statement can be quickly proven. These patients are mostly attended by filthy, so-called midwives, who neglect the breasts; in consequence of which, inflammation sets in, an abscess forms, poultices, if applied, are very irregularly put on, and the patient, through fear of the surgeon's knife, fails to seek advice until the whole breast has become involved, and is one mass of sinuses or fistulæ.

These patients complete the picture of woe and suffering, for they are broken in health, from loss of sleep and appetite, and owing to the long-continued suppuration have become very much emaciated, suffer from rigors, hectic, alternation of heat and cold, and have a high temperature ranging from 100 to 104° F.

If these patients could have been seen early, the abscess might have been prevented; or even if it had formed, prompt incision would have relieved the patient from pain and constitutional disturbance, prevented the abscess from enlarging, limited suppuration and the destruction of glandular tissue, and finally, secured coaptation and rest to the internal surface of the abscess, so that healing would have taken place much more speedily. When there is a prospect of the inflamed breast resulting in an abscess, no mention of the knife or lance should be made until it is "ripe," when without further delay the abscess should be opened at once. If we do otherwise, we needlessly excite the fear of our patient, and often lose a good paying one, who will suffer much, and seek the services of one who "does not believe in using the knife," but trusts all to nature regardless of cost. In opening an abscess, it is of but little use to attempt to allay the sensitiveness of the skin by the use of pure carbolic acid or the ether spray; but rather take a small, narrow, straight or curved bistoury, and make a perpendicular thrust or incision, radiating from the nipple, at the point where fluctuation is most distinct, or at the most dependent part of the abscess.

The lowest part of the abscess necessarily depends on the position of the patient: whether the patient is to remain in a

recumbent posture, or to walk about, and this must be considered before making the outlet for drainage. The operation can be done so quickly that the patient is scarcely aware of the cut ere it is done, and she will not experience one fraction of the pain she suffers each hour before it is opened. After incising, the pus should be let out freely, so as to allow the walls of the abscess to collapse, but it should not be forced out by squeezing the sac.

As a rule, granulating surfaces do not absorb, consequently, if the breast has been washed off with a solution of carbolic acid before incising, and the wound kept *absolutely clean*, there need be no fear of any septic condition arising. Fine marine oakum may be used to keep the incision or fistulæ open, in place of drainage tubes, which often cause irritation and renewed inflammation. After the breast has been again washed with a solution of thymol (3 i.-O.i.), absorbent cotton or fine oakum should be placed over the mouth of the abscess to catch the subsequent discharges, and a roller bandage carefully applied. If the abscess is large and discharges freely, the dressing should be changed night and morning, and *not allowed* to remain long enough to become septic. By these means, the breast will be equally compressed, the walls of the sac brought together, and the pus prevented from decomposing, conditions which conduce to rapid recovery. To those who prefer to follow Lister's directions for opening these abscesses, I would refer to Playfair's *Obstetrics*, Amer. ed., pp. 562, 563; or the last Amer. ed. of Holmes' *Surgery*. In old cases which come to us with the whole organ diseased and full of sinuses and fistulæ, undergoing *waxy degeneration*, and discharging an irritant acid pus, the treatment must differ considerably. In the first place, we must *cease all poulticing*, unless the inflammation lights up again, for constant poulticing soddens the integument and glandular tissues, and greatly retards the process of healthy granulation and repair. Any remaining abscess, or pocket, which has not thorough drainage, must be carefully incised. If this should be in a deep glandular or vascular part, and there be fear of injuring the blood-vessels or lacteal duct, Hilton's method of opening an abscess may be pursued, as follows: A careful incision is made with a scalpel through the integument and fascia, so as to ex-



pose the tissues under which the pus lies; a director is then pushed through the substance of the muscle or other tissue, into the cavity of the abscess, and along the groove of this guide, a slender dressing-forceps is pushed; when it reaches the abscess, the blades are opened wide, the tissues separated, and free exit given to the pus. In this way hemorrhage is not likely to occur; but in old sinuses, ulceration or sloughing of the coats of a vein or artery may occur, from which serious or fatal spontaneous hemorrhage is likely to result.

This is more liable to occur in cases of long standing in patients suffering from struma or cachexia. I recollect seeing a syphilitic patient recently, with mammary abscess, in whom hemorrhage set in so seriously that she would certainly have died, had not medical aid been at hand. Simple cases should be treated by injections of hot water, tincture of iodine, pressure, etc. If the hemorrhage be serious, the sac or sinus should be laid open and the artery ligated as usual. There is nothing so discouraging to patient or physician as these recurring abscesses, and old sinuses which refuse to heal up; and unless we can destroy their waxy or edematous granulations, or "limiting" pyogenic membrane, we must expect but little success or credit. Liquid caustics must of course be used, unless each sac or sinus be laid open, and for this purpose tincture of iodine, or solutions of silver nitrate, zinc chloride, etc., are effective agents. It is not advisable in sub- or glandular abscesses, to lay them open, and here, careful graduated compression will assist our stimulating injections. In hospital and dispensary practice, I have seen these waxy granulations or pyogenic membranes resist all treatment, under the most skilful surgeon's hands, until "*Villate's solution*" (see Bartholow's *Mat. Med.*, or *Dunglison's Med. Dict'y*), or "*Labarraque's Solution*" was used. I have used these, more especially, in sinuses extending from a necrosed hip-joint to the pelvic cavity or thigh, and also in old mammary abscesses of several months' standing, with immediate and almost magical results. In fact, my enthusiasm is so great in behalf of these two solutions for these old sinuses, that it has been my main incentive in bringing the subject of abscess of the breast to your attention. *Villate's solution*, and that only, saved the life of a young boy, at the Presbyterian Hospital,

upon whom excision of the hip-joint had been performed with a good result, except that the acetabulum became involved, and then extensive burrowing sinuses, with waxy granulations set in, which nothing but this solution could destroy. Dr. C. K. Briddon, New York, can testify as to its efficacy in this and other cases. Villate's solution, however, is painful, and must be diluted to about one part in two of water. Labarraque's solution (French prep'n) has been equally effective in my hands in *mammary abscess*, used about one part in eight or ten of water, with the syringe twice or three times a day. This has the advantage of not causing pain or soiling the clothing. *It is the most active stimulant of chronic ulcers or sinuses* that I have ever seen, and one has only to try it in order to believe. It was under Prof. A. C. Post's service at the Presbyterian Hospital that I first became aware of its great healing powers. Stillé's National, and the U. S. Dispensatory, also extol its virtues highly. In destroying these disease-breeding sinuses, and rapidly healing them, we remove much of the *danger of subsequent malignant mammary growths*, which *undoubtedly have their origin*, in most instances, in the *irritation* set up by the *inflammatory diseases* of the breast (see S. W. Gross on "Tumors of the Breast").

As the drain on the system is great, and the constitutional debility generally pronounced, much attention must be paid to general treatment; and abundance of nourishing food and appropriate stimulants given.

Of remedial measures, *quinine*, *iron*, *nux vomica*, *mineral acids*, and *cod-liver oil* are appropriate and useful. I have found the following mixture an excellent tonic and preventive of excessive suppuration in these cases: R Strychniæ sulph., gr. ss.; Tr. ferri chloridi, f. 3 iiss.; Acid. phosphor. dilut., f. 3 ij.; Aquæ, q. s. ad f. 3 iv. M. Signa: One teaspoonful in a wineglass of water after meals.

In conclusion, it is not to be supposed that the treatment outlined in this paper is to be carried out entire in ordinary cases of lactation, or that this paper will boldly defy the imputation that "there is nothing new in it;" but in answer, it is simply necessary to say, that abnormal cases of lactation only are referred to, and that our success in practice depends not so much upon new theories, as it does upon the thorough

and intelligent application of the surgical skill, and well-known remedies, which we now possess.

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A REVIEW OF THE OPERATION OF GASTROTOMY FOR MYO-FIBROMATA OF THE UTERUS.

WITH COMPLETE STATISTICAL TABLES.

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BY  
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(Continued from p. 1143.)

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*Statistics.*

I AM under very great obligations to Dr. D. S. Lamb, of the Army Medical Museum, for his patient researches into the literature of this subject. His perseverance is beyond praise. Without his assistance, I very much doubt if so exhaustive a series of cases could be presented with this article.

*Analysis.*—The following points will be considered :

1. Total number of cases reported, with rate of mortality and causes of death.

2. Total number of cases finished and unfinished.

3. Number of cases with adhesions, and number of cases in which the uterine appendages were removed, in whole or in part, with the tumor.

4. Number of cases in which the tumor alone was removed, and the number in which gastro-hysterectomy was performed.

5. Number of extra- and intraperitoneal cases, with death-rate for each.

6. Number of cases with drainage, and results.

7. Table of operations of individual operators, with results.

8. Average length of abdominal incision.

9. Nature of tumors.

1. *Totals*, including cases given by private communication, and which are not tabulated, as they merely give results, and not details. The results of operations are not given in the reports of some cases, and hence, as there is no way of ascertaining them, there is some discrepancy between the totals of mortality and the totals of cases. The difference covers the instances in which the result was not given by the reporter.



NATION.	NO. OF ASES.	RECOVERED.	DIED.
England.....	222	145	77
America.....	99	38	59
France.....	87	44	42
Germany.....	137	70	49
Russia.....	11	6	5
Hungary.....	3	3	..
Spain.....	1	..	1
Italy.....	6	2	4
Scandinavia.....	7	3	4
Total.....	573	311	241

2. *Complete or Incomplete, with Results.*—

NATION.	INCOMPLETE.	REC.	DIED.	COMPLETE.	REC.	DIED.
England.....	49	30	17	115	69	45
America.....	14	6	8	80	24	48
France.....	3	2	1	83	43	40
Germany.....	2	1	1	64	39	25
Russia.....	..	..	..	11	7	4
Hungary.....	..	..	..	3	3	..
Spain.....	..	..	..	1	..	1
Italy.....	..	..	..	6	2	4
Scandinavia.....	..	..	..	7	3	4
Totals.....	68	39	27	370	190	171

In very many of the cases, the results are not given, and in others it is not specified whether the operation was completed or not; hence the discrepancy between this table and Table I. Many of the later cases also, given me through private communication, contain only gross results without details. The later cases of Schröder, Hegar, and Billroth do not appear in this table. The German results are taken solely from the large tables.

3. *Adhesions. Removal of Uterine Appendages in Whole or in part.*—

NATION.	ADHESIONS.	REMOVAL OF APPENDAGES.
England.....	100	58
America.....	23	24
France.....	30	40
Germany.....	14	36
Russia.....	5	10
Hungary.....	Not given.	
Spain.....	..	..
Italy.....	2	2
Scandinavia.....	2	6
Totals.....	176	176

It is certainly probable, judging from the context in the articles reporting these cases, that the appendages were removed more frequently, but I have only tabulated the instances in which there is no doubt. The German list is taken from the large tables.

4. *Tumor alone Removed, or Tumor and Ovaries Without the Uterus. Gastro-hysterectomies.*—Taken from the large tables, not including those cases given by private communication, which lack details.

NATION.	TUMOR.	REC.	DIED.	GASTRO-HYSTERECTOMY.	REC.	DIED.
England .....	50	26	22	61	33	23
America! .....	20	5	11	40	15	24
France .....	20	13	7	55	34	20
Germany .....	9	5	4	54	32	19
Russia .....	3	..	3	8	6	2
Hungary .....	..	..	..	1	1	..
Spain .....	1	..	1	..	..	..
Italy ..	2	1	1	4	1	3
Scandinavia .....	1	..	1	6	2	3
Totals .....	106	50	50	229	124	94

The result of Hjelt's case (Scandinavian) is not given by the reporter. Of England's 61 gastro-hysterectomies, taken from the large tables, the results are not stated in five instances. It will be seen that some cases report what was removed, and yet do not state the result of the operation. Thus, in the American list, 20 cases are reported in which the tumor was removed, but the results are only given in 16 cases. This list is complete only to date of large tables. Individual results to later date are in Table VII.

5. *Extra and Intra-peritoneal Cases. Results:—*

NATION.	EXTRA-PERIT.	EC.	DIED.	INTRA-PERIT.	REC.	DIED.
England .....	54	34	14	18	8	10
America .....	30	16	13	6	1	4
France .....	83	43	40	2	..	2
Germany .....	66	47	19	51	26	15
Russia .....	4	1	3	7	5	2
Hungary ..	Not stated.			Not stated.		
Spain .....	1	..	1	..	..	..
Italy .....	4	1	3	..	..	..
Scandinavia .....	5	1	4	..	..	..
Totals .....	247	143	97	84	50	33

<sup>1</sup> Some cases details not given.

Many of the early operators used a mixed method. The stump was dropped, but the ligatures were allowed to hang out of the wound.

7. *Individual Operations completed, with results.*—Many of these cases do not appear in the tables, and were obtained by personal communications.

NAMES.	DATE.	NO. OF OP.	RECOV'ED.	DIED.
Bantock ... ..	March 7th, 1883.	22	20	2
Tait <sup>1</sup> .....	September, 1882.	30	20	10
Wells.....	Up to latter part of 1881.	40	19	21
Thornton.....	1882.	25	16	9
Koeberlé.....	1882.	19	9	10
Billroth.....	1882.	25	10	15
Schroeder <sup>2</sup> .....	July, 1882.	50	35	15
Hegar and Kaltenbach } ...	September, 1881.	12	11	1
Savage.....	1882.	9	6	3
Thomas.....	September, 1882.	13	7	6
Burnham.....	1864.	10	2	8
Kimball.....	October, 1883.	11	6	5
Péan.....	July 1st, 1881.	52	33	18
Krassowsky.....	May, 1876.	5	2	3
Olshausen.....	1883.	12	8	4

The remainder of Péan's cases from July 1st, 1881, are in vol. iv., *Cliniques Chirurgicales de l'Hopital St. Louis*, which is just issuing from press.

8. *Length of Incision.*—Hegar and Kaltenbach prefer a long incision and a short operation. Péan thinks that both the operation and incision should be as short as possible. A long incision has many advantages, since it avoids the danger of contaminating the exposed abdominal cavity. If the tumor is to be extirpated piece-meal, the incision of course will be shorter than if we are to extract it as a whole. But there are dangers attending the piece-meal method. If we puncture, the contents of the tumor may be ejected into the peritoneal cavity, or we may wound some vessel or set up a serious hemorrhage. So that for cystic tumors of large size alone should puncture be attempted. In firm and non-vascular tumors, the piece-meal, treatment is a tedious one, and unless great care be exercised, there will be hemorrhage or a danger of sepsis from contamination of the cavity. A long incision

<sup>1</sup> Private communication.

<sup>2</sup> In his first 25 cases, Dr. Schroeder had 10 deaths. In his second 25, 5 deaths.



gives a better view of the field of operation, and allows us to push the tumor up out of the wound, without resorting to great traction by forceps or sling.

*Conclusions.*—In weighing the value of statistical tables we must oppose to the death-rate of the earlier operations the results which have been reached during the last five years. Each ten years of progress must be examined separately, for with each decade we have a diminished mortality. In his first 25 cases, Schroeder had ten deaths; as opposed to this he had only half as many in his subsequent 25 cases. Hegar and Kaltenbach report only one death with the elastic ligature plan, although they had two deaths with the intraperitoneal treatment of the pedicle. From August 17th, 1876, to February 24th, 1881 (inclusive), Péan reports 10 deaths and 16 recoveries, while out of 52 cases from September 22d, 1869, to July 1st, 1881, he had 18 deaths and 33 recoveries, his increase being due to the exceedingly unfavorable condition of his later cases, and as I believe, also to the disadvantages of his plan of extraperitoneal treatment already alluded to. During a period of three years or less, Bantock had 22 operations with 2 deaths and 20 recoveries. From table 7 (individual operations), there were performed during the past five years 244 cases (this only includes 14 completed cases of Spencer Wells from 1877 to 1881, and does not include Kimball's or Burnham's cases, of which I have insufficient details). Some of these only extend to 1881, others to 1882, and one to 1883. They are all reckoned from 1878, so that if they were carried up to October, 1883, the total would be larger. Out of these 244 cases (counting Schroeder's total of 50 cases, Péan's 26, Koeberlé's 17, and Wells' 15), there were 83 deaths and 161 recoveries. Within the last two years Bantock and Thornton in England, Hegar and Schroeder in Germany, and Péan in France, have cut down the mortality to a minimum, so that the operation is not regarded as being of any more serious a nature than ovariectomy. The success of Hegar and Bantock is beyond cavil, and as a representative of the intraperitoneal plan, Schroeder has battled against great odds and has come out crowned with the laurel. All praise is due to Péan, who placed the extraperitoneal plan upon a firm foundation, and he exceeds all others in the number of his completed operations.

In considering the results, it should be remembered that supra-vaginal extirpation of the uterus is only thought of when life is endangered, when the patient is weakened by disease, and when other means have proved ineffectual. The good results of recent operations will probably lead to early interference if the indications are such as to warrant it. This will be a great factor in ultimate success, as the patients will not have become weakened by the constant drains made upon them. If hemorrhage has set in, and if all the visceral disturbances in whole or in part are present, due to irritation or compression, if we have reason to suspect a vascular tumor with adhesions, nothing can be gained by waiting until the growth has attained a huge size.

The after-treatment of gastrotomies consists in the antiseptic dressing of the stump and wound. Sesquichloride of iron, permanganate of potash, and carbolic acid have all been used. Péan painted the stump with iron. But this simply produces a crust over the surface, and does not prevent the possibility of septic infection. Hegar and Kaltenbach at first made free use of chlorine water, by permanent irrigation. Owing to the irritation of the air passages which its inhalation occasioned, they abandoned it in favor of the post-treatment to which I have referred in speaking of their operation. Another method consists in cutting down the stump with scissors daily, the chloride of zinc then permeates more thoroughly every part, and so infection from the vaginal side is warded off. The vagina and cervical canal should also be irrigated with an antiseptic solution, and air should be excluded. In the *Zeitschrift für Geb. u. Gynäk.*, ix., 1, 1883, Dr. Schroeder says that the burning question of the day is not of ovariectomy, but of myomectomy. That whereas ovariectomy has reached a definite end, we know nothing of myomectomy. The dispute is confined to the extra- and intra-peritoneal methods. In ovariectomy, the intraperitoneal gained the day. In myomectomy, Hegar and Péan prefer the extraperitoneal. To these is opposed Schroeder, who first turned his attention to the intraperitoneal. He believes this to be the operation of the future, and has been strengthened in this belief by the results of his later operations. Schroeder operates as follows: He ligates, one by one, both the lateral ligaments of the uterus, and for this purpose it is by no means necessary to apply the ligature en masse, but if you

hold the parts toward the light you can easily distinguish within the *ligamentum infundibulum pelvicum*, which may be ligated as related. In the same way the branches of the uterine artery. This being done, an elastic tube is passed around the inferior part of the uterus. Schroeder formerly used hollow tubes, now he uses solid ones. If you now ablate, a quantity of blood will appear coming from the thick veins of the tumor. After ablation, a flat wedge-shaped piece is cut out of the uterus in such a manner that the peritoneum is at first split. This retracts so that a kind of cuff (*manchette*) is formed. Both of the cut faces of the wedge Schroeder unites by sutures—generally in several divisions—in order that both surfaces may be safely pressed together. If this has been done, union of the peritoneum follows. Where, as is generally the case, this succeeds, there is only one fine wound looking into the abdominal cavity, viz., the one of the peritoneum. Departures from this course are sometimes necessary by reason of hemorrhage. In 14 operations Schroeder lost only one case, and this not of hemorrhage, but of sepsis. With such results the intra-peritoneal method is the best. This plan will apply equally well for gastro-hysterectomies. Dr. Schroeder thinks that we should not be persuasive in regard to influencing a patient toward an operation, but leave the decision partly to the development of the tumor.

The percentum of deaths taken from table I., including all gastrotomies and gastro-hysterectomies, is 42+. Eliminating all uncertain cases, the percentage of death by the extraperitoneal plan during the last five years is 36.54 per cent; the percentage of deaths by the same method during the past two years is 26+ per cent. This excludes all cases where only portions of the uterus were ablated, and includes only those in which the uterus, tumor, and appendages were removed. Now if we exclude from this category those cases which were almost beyond all hope, the mortality rate for England would be 23.3 per cent. But even this mortality would fall far lower if we only consider the percentage of those operators who have been most fortunate. The gross percentum of mortality by the extraperitoneal plan is, of course, swelled by the many cases with fatal results which have occurred in the practice of less fortunate operators. So that while one or two men have done brilliantly, their averages, joined to the aggre-



gate of all others, do not seem to influence the death-rate as much as might at first glance be expected. It may be said that the mortality for England does not now exceed 27.3 per cent. Hegar's per cent is, of course, very brilliant, and so is the later success of Schroeder by the intraperitoneal operation. If the same good result should fall to the lot of other surgeons, there can be no question of the truth of Schroeder's prophecy of the future of his method. The dispute is narrowed down to the plans of Hegar and Schroeder. Both are splendid achievements, both have had unprecedented success in the hands of their originators. Hegar's method will probably hold its own for many years to come, because the extraperitoneal operation is the popular one. But it is only a question of time before the tide will turn in the other direction.

*Remarks on American Cases.*—Pozzi, p. 45, attributes Agnew's case to Mears, who simply examined it. Caternault quotes Atlee's case, of Dec. 20th, 1851, as being in a negress, but I do not find any evidence of it. In Atlee's case, of June 5th, 1868, the second reference gives the age as fifty-seven, and says the patient was single. The case of Baker, of Nov. 13th, 1856, is generally credited to Boyd, who merely assisted at the operation and reported it. The character of the tumor in Dr. Blackman's case is not given. Burnham, discussing his case, of June 25th, 1853, says: "Although this case terminated favorably, I would not easily be induced to make another attempt to extirpate the uterus and ovaries, or even to remove the uterus under almost any conditions." Kimball's case, of Oct. 12th, 1853, is generally credited to Cutter, who assisted at the operation and forwarded the tumor to Jackson. At the meeting of the Pathological Society, Dr. C. C. Lee, discussing his case, of Nov. 2d, 1869, is reported as saying that there was no trace of ovary. A few years later, he states that dissection showed both ovaries agglutinated to cyst-wall. Little's two cases are probably identical. Both Caternault and Boinet erroneously quote Parkman's case as 1842, instead of 1848. The case cited from Parry as being done by two physicians was one in which it was sought to deliver an extrauterine pregnancy with forceps. When the abdominal cavity was opened, no infant was found. Peaslee's case, of Feb., 1868, reported by C. C. Lee, is the same as the one reported in AM. JOURN. OF OBST.,

## UNITED STATES

Number.	Name of operator.	Date and place of operation.	Completed or not.	What was removed.	Duration of operation.	Length of incision.	Character of tumor and complications.
1	D. H. Agnew.	Phila., Sept. 30, '71	Not.	Tapped tumor.	...	3 in.	Fibro-cyst of uterus, acites; adhesions.
2	J. L. Atlee	1874.	Com.	Tumor.	....	Long	4 fibrous tum. of ut., thick ped.; adhesions
3	Walter F. Atlee.	April 18, 1871.	"	Uterus.	....	....	Myoma, w. 5 lb.; interst. adhesions.
4	W. L. Atlee.	August 28, 1844.	"	Tumor.	19½ m.	8 in.	Nod. fib., w. 1 lb. 3oz.; moderate ascites; no adhes.; ped. vascular.
5	Do.	May 22, 1849.	Not.	....	25 h	Long	Large tumor of fundus; adhesions; with ovs. diseased; interst.
6	Do.	Oct. 13, 1849.	"	....	....	"	Fibro-cyst; no adhe.
7	Do.	Nov. 24, 1849.	Com.	Tumor.	....	"	Fibroid of fundus; w. 6 lb.; pediculated.
8	Do.	April 13, 1850.	Not.	....	....	....	Ut. tum; no adhes.
9	Do.	May 20, 1851.	Com.	Tumor.	....	Long	Fib. pedic tum. to fundus; w. 6 lb.
10	Do.	Dec. 20, 1851.	Not.	....	....	"	Fib'd extra ut.; firm ad.; abdom. abscess was op.
11	Do.	March 3, 1853.	Com.	Tumor.	....	"	3 fibrous tum. ut., w. 4 lb.; 2 had ped., 1 interst.
12	Do.	Phila., Oct. 10, '59.	"	"	....	....	Ped. ut. cystic tum.; ped. seemed to be almost part of ut.
13	Do.	" June 18, '62.	"	"	..	....	Fib.-cystic ped tum.; ped myomatous; w., solid portion, 40 lb.; fluid, 15 lbs.
14	Do.	" Nov. 20, '67.	"	Ut. & ovs.	....	....	Fib.-cyst ut. & ovs.; w. 48 lbs., 52 lbs. fluid
15	Do.	" June 5, '68.	"	Tumor & left ovary.	....	7 in.	2 fib.-cystic tum.; 1 of ut., 1 broad lig.; w. 40 lbs.; pediculated.
16	Do.	Reading, Pa., Sept. 1, 1875.	"	Ut. & ovs.	....	7 or 8 in.	Fib. inters. tum. of ut.; 1 ovary cystic.
17	William J. Baker.	Knoxville, Tenn., Nov. 13, 1856.	"	Sup.-vag. ut. & both ovaries.	....	Long	Interstitial fibrous tumor; adhesions.
18	John Bel-linger.	Charleston, S. C., June, 1846.	"	sup. vag. uterus.	...	One long & another at r. angle	Interstitial tumor; said to be in Mus. of Med. Col.
19	...	New York, 1849.	....	Uterus.	....	....	....
20	H. J. Bigelow.	Dec. 29, 1849.	Com.	Tum. of ut and ov.	....	Long	Cyst of left ov.; w. 8 lbs.; tum. of ut. ½ lb., pedicle, ascites.

AND CANADA.

Antiseptics.	Operation.	Age, Married or single.	Previous operation.	Result.	Reporter and where reported.
Ether.	....	32, M	Tapped Aug '71 ut. pol. rm'd '71	Died third day.	W. L. Atlee, Diag. Ov. Tumors, Phila., 1873, p. 256.
....	Lig.	42	....	Died fifth day.	W. L. Atlee, Am. J. Med. Sc., ix., 1845, p. 334.
....	Clamp to cer. lig. ex	52, M	....	Recovery.	Atlee, Tr. C P., Phil. Ap. 19. May 3, '71, A. J. Med. Sc., lxii, '71, p. 157, A J Ob. iv., '71-2.
....	Lig. in lower angle.	24, S	....	"	Atlee, A. J. Med. Sc., ix., '45, p. 309, & [356 xxix., '5, p. 387, Diag. Ov. Tumors, p. 249.
Chloro., ether.	....	33, S	Tapped	"	Atlee, A. J. Med. Sc., xix., 1850, p. 318, Diag. Ov. Tumors, p. 243.
"	....	43, S	....	"	Atlee, A. J. M. Sc., xxiv., '55, p. 388.
"	....	39, M	....	"	" A. J. M. Sc., xxiv., 1855, p. 388, Diag. Ov. Tumors, p. 251.
"	....	41, S	....	"	" A. J. Med. Sc., xxiv., '55, p. 389.
"	....	45, M	....	Death 3d d.; hemor.	" " xxiv., '55, p. 390.
"	....	....	....	Recovery.	Diag. Ov. Tumors. p. 252.
"	....	40, M	....	Died 3d d.; peritonitis	" A. J. Med. Sc., xxiv., 1855, p. 390, Tr. Am. Med. Asso., 1853, p. 627.
....	.... <sup>1</sup>	42, M	....	.....	" American Journal of Medical Science, xxiv., 1855, p. 391.
....	....	40, S	Tapped Mch. 22 1862.	Died 4th day.	" " " " 276.
...	....	59, M	do. 2 wk prev. ter; exha	D. 36 h. af	E. Delafield, N. Y. P. So., Nov. 27, 1867; Med. Rec., ii., 1867-8, p. 570.
....	cl. in wou'd dbl. lig. Fal tube rem.	56, M	Tapped three tim's	Recovery.	Atlee, Diag. Ov. Tum., p. 279, Inter. Med. Congress, Sept., 1876, "Fib. Tumors of Uterus," 1871, p. 16.
....	stp. o t side clp. dbl. lig	44, M	....	"	Inter. Med. Cong., Sept., 76, "Fib. Tums. of Ut." 1871, p. 14.
Chloro., ether.	Pedicle in lower angle.	M.	....	"	John M. Boyd, A. J. Med. Sc., xxxiii., 1857, p. 572, South. J. Med. & Phys. Science, v., 1857, p. 71 and 220.
....	Animal lig.	30-35	....	Died 5th d. peritonitis	Bellinger, South. Journal Medicine and Pharmacy, ii., 1844, p. 244.
....	....	....	....	D. on table	[Rec., ii., '67-8, p. 571.
....	Lig.	22	Tapped twice	D. 3d day.	Bibbins, N. Y. Path. So., Nov. 27, '67, M. Bigelow, Boston Med. and Surg. J., xli., 1850, 503.

<sup>1</sup> Condition of patient, bad.



## UNITED STATES

Number	Name of operator.	Date and place of operation.	Completed or not.	What was removed.	Duration of opera.	Length of incision	Character of tumor and complications.
21	George C. Blackman	...	Not.	....	....	....	Tum. of ut. & ovs. in which some intes. were imbedded.
22	Buckingham.	Boston, June, 1865	Com.	....	....	....	....
23	W. Burnham.	Lowell, June 25, 1858.	"	subvag. ut. & ovaries.	....	....	Ped. fib. tumor; w. 8 lb.
24	Do.	Before 1863.	"	....	....	....	....
25	Do.	"	"	....	....	....	....
26	Do.	"	"	....	....	....	....
27	Do.	"	"	....	....	....	....
28	Do.	"	"	....	....	....	....
29	Do.	"	"	....	....	....	....
30	Do.	"	"	....	....	....	....
31	Do.	Lowell, Sept. 9, 1864.	"	subvag. ut. and opp.	....	Long	Hyper. of uterus; w. 8 to 10 lbs.
32	Do.	....	Not.	....	....	....	Tumor of uterus....
33	J. R. Chadwick.	Boston, Sept. 18, 1875.	Com.	Body of ut. & tumor.	1 h.	8 in	Inters. fib. of uterus; w. 4 lbs.
34	J. B. Cutter.	Newark, N. J., Feb. 1, 1868.	"	Uterus & tumor.	2½ h.	Long	Ped. myoma fundus; ascites, adhesions.
35	Do.	Newark, N. J., Sep. 14, 1868.	"	Uterus and ap.	3 h.	"	Fibrous tumor of uterus.
36	J. Deane.	Greenfield, June 6, 1848.	Not.	....	....	....	Fib. tum. ut. & l. bro'd lig.; escape of intest.
37	W. J. Drake.	Atlanta, Ga., before July 3, 1875.	Com.	Uterus & Fal. tubes.	....	....	....
38	Emmet.	....	Not.	....	....	....	Fib. of ut. with. ov. cyst; adher. to ute.
39	Do.	1874.	Com.	Sup. vag. uterus.	....	....	Fibro cyst of ut.; ext. adhesions.
40	E. D. Forée	Louisville, Ky.	....	....	....	....	Uterine fibroid.
41	William Goodell.	May 4, 1879.	Com.	Tumor by enucleat'n	....	Long	Fibro cyst ut.; inters. w. 17 lbs.
42	Do.	....	"	....	....	....	Multiple fib.; sessile and ped.
43	Do.	....	....	....	....	....	Myo-fibroma.....
44	G. P. Hackenberg.	Hudson, N. Y.	"	Tumor.	30 m.	6 in.	Solid ut. tum.; est. w. 25 lbs.; adherent to omentum.
45	John B. Hays.	West Ely, Mo., June 12, 1851.	"	"	45 m.	8 in.	Lob. fib. cartil. tum.; ped. w. ¾ lb.; adhesions to omentum; escape of intest.
45	Herff.	San Antonio, Tex., Aug. 12, 1854.	"	Tumors by enucleat'n	40 m.	5 in.	Hard fib.; w. 4 lb. 3 oz.
47	John Homan.	April 4, 1881.	"	Tumor of ovaries and ut.	....	Long	Dermoid of ov.; spindle-cell sarc. of ov.; fibro-myoma of ut.

AND CANADA—Continued.

Antisepsis anesthetics.	Operation.	Age. Married or single.	Previous operation.	Result.	Reporter and where reported.
....	....	....	...	D.few da's after.	Ohio Med. and Surg. J., xii., 1859, 1860, p. 97.
....	....	....	....	D. s a m e d.; shock	Storer, Am. J. Med. Sc., li., 1866, p. 123.
Chloro.	Lig.	M	....	Recovery.	Burnam, Nelson's Am. Lancet, viii., '53-'54, p. 147, Worcester J. of Med., ix., '54, p. 41, li., '66, p. 138, A.J.M.Sc.
....	....	....	....	D.1h.;shk.	Storer, A. J. M. Sc.,li., 1866, p. 123.
....	....	....	....	D.5d.;peri	" " "
....	....	....	....	D.4d.;peri	" " "
....	....	....	....	Do.	" " "
....	....	....	....	D.3 d.; per	" " "
....	....	....	....	d.2d.sho'k	" " "
....	....	....	....	d 4h.sho'k	" " "
Chloro.	Lig.	45, M	....	Recovery.	G. L. Collins, R.I. Med. So., Dec.31.'64, Bost. M. & S. J., lxxiii., '66, p. 211, Am. J. Med. Sc., li., '66, p. 138.
....	....	....	....	....	Dr. Storer (4 cases), Am. J. Med. Sc., li., 1866, p. 125.
....	Wells' clp. to cer&b.l	50, M	....	D.8th day; tetanus.	Chadwick, Bost. M. & S. J., xciii., 1875, p. 522.
....	st.in'ound éc.lig.&cl.	25, M	....	D. 10 hrs.; hemorr.	Cutter, N.Y. Path. So., Feb. 12, 1868, Med. Rec., iii., 1868-9, p. 160.
....	lig. in an- gle; clamp	40, S	.... <sup>1</sup>	D.4th day; exhaust.	Cutter, N.Y. Path. So., Sept. 23, 1868, Med. Rec., iii., 1868-9, p. 377.
....	....	43, M	....	Recovery.	Deane, Bost. M. & S. J., xxxix., 1849, p. 221.
....	....	....	....	Do.	Drake, Atlanta M. & S. J., xiii., '75-6, p. 318.
....	....	....	....	Death	Peaslee, "Ovarian Tumors," 1872, p. 97.
....	D o u b l e Lig.	....	....	D i e d i n few hours	Emmet, "Gynecology," 1879, p. 562.
....	....	....	....	D.on table	" " " p. 523.
Lister.	drop'd st.; écra.to ut.	40, S	....	Recovery.	Goodell, Tr. Ob. So. Phila., Sept.4,'79, A. J. Ob., xiii., 1880, p. 146.
Spray.	1st incis.vag. roof, then opened abd.	34, M	....	D.6th day; septic per.	Goodell, Tr. Ob. So. Phila., Nov. 6,'79, A. J. Ob., xiii., 1880, p. 168.
....	....	....	....	D e a t h; pulmon. embol.	Baer, Ob. So. Phil., Dec.7,'82; Goodell, same, Jan. 11, 1883, N. Y. Med. J., xxxvii., 1883, p. 557.
Chloro.	S t u m p outside écra's ur	45, S	....	Death 3d d.; perit- onitis.	Hackenberg, Med. Record, N. Y., ii., 1867-8, p. 505.
Noanes.	D o u b l e Lig.	42	....	Recovery.	Hays, American Journal of Medical Science, xxxiii., 1857, p. 322.
Chloro.	Lig. lower angle.	43, M	...	Do.	Stillman, N. Y. J. Med., xvi., 1856, 1856, p. 167.
Ether.	Dawson's clmp.Paq. cautery.	40, S	....	Do.	Homans, Bost. M. & S. J., civ., 1881 p. 374.

<sup>1</sup> Condition of patient, bad.

Number.	Name of operator.	Date and place of operation.	Completed or not.	What was removed.	Duration of operation.	Length of incision.	Character of tumor and complications.
48	G. Kimball.	Lowell, Sept. 1, '53.	Com.	Enuc. tu., remo'd ut.	40 m.	4 in.	Inter. fibroid.....
49	Do.	Lowell, after Sept., '53, bef. April, '55.	"	Uterus & tumor.	.....	.....	Fibroid tumor of uterus.
50	Do.	Lowell, prior to Sept., 1853.	"	Do.	.....	.....	Enormous irreg. lob. tum. of uterus.
51	Do.	Lowell, Oct. 12, '53.	Not.	....	... 9 in.	.....	Ut. fib.; w. 3½ lbs.; interst. adhesions, conv. into cyst tum.
52	Do.	Lowell, Sept. 18, 1869.	Com.	Oment. & uterus.	....	Long	Solid fib. of ut.; w. 30 lbs.; ped. oment. conv. into cyst tum.
53	Do.	Lowell, Nov. 10, 1875.	"	Uterus & ovary.	....	.....	Tum. of ov. embracing hyp. uterus.
54	Do.	Lowell, Jan. 5, '76.	"	Ut. and l. ovaries.	....	.....	Fib. c. ut.; 5 lbs. solid, 20 lbs. fluid; ad.; hem-
55	E. Krackowizer.	New York, June 25, 1867.	"	Sup. vag. uterus.	2½ h.	4 in.	Large fib. of ut.; adhesions to omentum.
56	C. C. Lee.	New York, Nov. 2, 1869.	Not.	....	2 h. ....	.....	Fib. cyst of ut.; spindle cells in cyst wall; inter. ad
57	J. Little.	New York, Nov. 29, 1869.	"	Portion of sac.	....	.....	Cystic fib. sprung from cervix.
58	Do.	Do.	Com.	Tumor.	....	.....	Ped. fib. tum. of ut.
59	M. D. Mann.	New York, March 11, 1880.	"	Ovaries.	2 h.	6½ in.	Fib. of uterus .....
60	R. B. Maury.	Memphis, Tenn., Nov. 20, 1875.	"	tum. and hernial sac	55 m.	Long	Fib. cyst ut.; ascites adhe.; w. 4 lbs.; ped.
61	E. E. Montgomery.	Phila., May 5, '80.	"	uterus & appen.	2 h.	"	Mult. ut. fib.; w. 12 lbs. pedicle slight ad.
62	R. D. Mussey.	1850.....	Not.	...	....	"	Interst. tum. of ut.
63	Noeggerath.	New York, Sept. 29, 1877.	Com.	Tumor.	1¼ h.	"	Fib. cyst of ut.; vascular adhesions.
64	Packard.	Oct. 26, 1863.....	Not.	....	....	8 in.	Fib. tum. l. ov. & ut.; w. 14 lbs.; pediculat.
65	Samuel Parkman.	Boston, Jan. 8, '48.	Com.	Tum. and large part of uterus.	12 m.	.....	Fib. tum. ut.; w. 8 lbs. 13 oz.; interst.
66	Two physicians.	See remarks.	....	....	....	.....	Fib. tum. uterus....
67	E. R. Peaslee.	Sept. 21, 1853.	Com.	uterus & l. ovary.	....	6 in.	Fibrous tumor of uterus; w. 19 oz.; degenerating.
68	Do.	....	"	Tumor.	....	.....	Tumor of uterus.

Condition of patient: <sup>1</sup> Fair; <sup>2</sup> emaciated; <sup>3</sup> good; <sup>4</sup> anemic;



## AND CANADA—Continued.

Antisep'tic anesthetics.	Operation.	Age. Married or single.	Previous operation.	Result.	Reporter and where reported.
Chloro.	Lig.	34, M	.....	Recovery.	Kimball, Bost. M. & S. J., lii., 1855, p. 249, Am. J. M. Sc., li., '66, p. 138.
....	....	.....	....	Died third day.	Kimball, Boston M. & S. Journ., lii., '55, p. 254.
....	....	.....	.....	Died tenth day.	" Do.
....	....	33, S	....	Died 12th day.	" Am. J. Med. Sciences, xxvii., 1854, p. 341.
....	Lig. at lo'er angle	42, M	.....	Recovery.	" Trans. Am. Med. Assoc., xxviii., 1877, p. 323.
....	Stump in wound. <sup>1</sup>	48, M	.....	"	" Bost. M. & S. J., xcv., '76, p. 250, London Ob. J., iv., '76-7, p. 772.
Ether.	stp. held by ec. in l. an. <sup>2</sup>	36, M	Tapped	"	Presbrey, Boston M. and S. Journal, xcv., 1876, p. 29.
Chloro.	silver wire to stump brou't out of wound <sup>3</sup>	48, M	.....	D. next d.; peritonitis	Krackowizer, N. Y. Path. Soc., June 27, 1867, M. Rec., ii., 1867-8, p. 297.
"	Lig.; cut close. <sup>4</sup>	45, S	Tapped	Died 31 h.; peritonitis	Lee, N. Y. M. J., xiv., '71, p. 452, Tr. Path. So. N. Y., Nov. 22, '69, M. R., iv., '70-1, 495
....	Clamp.; tap'd cyst.	44, S	.....	D. 10 days; exhausti'n	Lee, N. Y. M. J., xiv., '71, p. 455, N. Y. P. S. Dec. 8, '69, M. R., iv., '69-70, p. 520.
....	...	.....	.....	....	Thomas, Dis. of Women, 1874, p. 525.
Ether.	Lig. <sup>5</sup>	44, W	.....	D. 4 h. after; shock.	Am. J. Obstet., xiii., 1880, p. 793.
"	Tied half's cut close. <sup>6</sup>	32, M	Tapped 3 times	D. 9th day; peritonitis	N. Y. Med. J., xxxi., 1880, p. 337, London Ob. J., viii., 1880, p. 512.
Spray.	Glass dr.-tube. <sup>7</sup>	53, S	.....	D. 53 h. after; shock.	Montgomery, Tr. O. S. Phila., May 6, 1880, Am. J. Ob., xiii., 1880, p. 308.
Ether.	....	.....	.....	D. 14 h.; exhausti'n	Hamilton, Ohio M. & S. J., xii., '59-60, p. 113, Atlee, Tr. A. M. As., iv., '51, p. 308.
....	Gal. caut. and lig.	30, M	Tapped twice.	D. same d.; hemorr.	Noeggerath, Tr. N. Y. O. S., Nov. 6, '77, Am. J. Ob., 1878, p. 580.
....	Tape'd; bl. flowed; lig. ga'd, clos'd wound.	21, S	Tapped once.	D. ath 15th day.	Packard, Tr. Coll. Phys. Phila., May 3, '71, A. J. M. Sc., lxvii., '71, p. 433.
Chloro.	Lig. out-side. <sup>8</sup>	27, S	....	D. 11 h. after; hem.	Parkman, Am. J. Med. Sc., xv., 1848, p. 371.
....	....	.....	.....	Died.	Parry, Extraut. Preg., Phila., 1876, p. 173, quoted by Keller from Schreyer.
Ether.	Artifi. ser-um to wash hands; db. lig.; g. elas. dr. tube. <sup>9</sup>	35, W	....	....	Peaslee, American Journal Medical Science, xxix., 1855, p. 393.
....	....	.....	.....	Died fifth day.	N. Y. Acad. Med. Dec. 19, '67, M. R., ii., '67-8, p. 521 (C. C. Lee, N. Y. Med. J., xiv., '71, p. 467.)

<sup>5</sup> anemic; <sup>6</sup> anemic; <sup>7</sup> anemic; <sup>8</sup> good; <sup>9</sup> not good.

Number.	Name of operator.	Date and place of operation.	Completed or not.	What was removed.	Duration of operation.	Length of incision.	Character of tumor and complications.
69	E. R. Peaslee.	February, 1868. . . .	Com.	Tumor.	....	....	Fib. cyst fundus pediculated; extensive adhesions.
70	Do.	February, 1876. . . .	"	Uterus & ovaries.	....	....	Fibroid; w. 48 lbs.; ped. from fundus.
71	Do.	November 12, 1868.	"	Uterus.	4 h.	8 in.	Fibroid fundus; w. 12 lbs.; interst.
72	Charles A. Pope.	St. Louis, Mo., April 12, 1866.	"	Uterus & ovary.	....	Long	Fib. of ut., cyst of ov.; adhe.; interst.
73	H. B. Sands.	New York, June 12, 1865.	"	Uterus & appen.	1½ h	"	Fib. tumors; inter & ped ad.; rup. in blad.
74	See remarks.	San Francisco . . . .	"	....	....	....	Large fib. tum. of ut. separ. from its ped.
75	A. F. Sawyer.	Do., June 8, 1859.	"	Uterus.	....	Long	Tumor of fundus; 7½ lbs.; interst.
76	Nathan Smith.	See remarks. . . . .	....	....	....	....	....
77	A. R. Storer.	Boston, Sept. 23, 1865.	"	Uterus & ovary.	3 h.	5½ in.	40 cystic tums.; some ped.; w. 37 lbs.; in. adhe. to omentum.
78	Not given.	....	"	Tumor.	....	Long	Large ut. tumor removed by enuclea.
79	T. G. Thomas.	New York, 1864.	"	"	....	....	Fib. cyst ut.; ped. 17 lbs.
80	Do.	Do., Sept. 25, 1871.	"	"	....	4 in.	Cystic tum. of fund.; in. adhe.; hemorr.
81	Do.	Tho. gives May 19, '74; May 18, '75.	"	Uterus & both ovs.	33 m.	Long	Fibrous inter. tum.; 49 lbs.
82	Do.	....	"	Tumor.	....	....	Fib. of ut.; vascular adhe.; short pedicle.
83	Do.	January 3, 1880.	"	Uterus & ovaries.	....	....	Fib. cyst tum., with ut. & ovs. attached.
84	Do.	April 9, 1881. . . . .	"	Uterus & ovaries.	....	....	Myo. lymphangiect.; 19½ lbs.; adhe. ascites
85	Do.	March 26, 1881. . . .	"	Ut. & por of tumor.	....	....	Sessile, adhesions. . .
86	Do.	April, 1881. . . . .	"	Uterus & tumor.	....	S. to U.	Solid sessile; adhesions.
87	E. H. Trenholme.	Montreal, June 12, 1874.	"	Uterus & append.	2½ h	14 in.	Fib. cystic in. tum. w. 10 lbs.; ad; hemorr.
88	Do.	Montreal, April 19, 1876.	"	Do.	55 m.	Long	Fib. tum. uterus. . . .
89	Do.	Montreal, Feb. 19, 1883.	"	Sup. vag uterus.	2 h. 15 m	....	Fib. cyst uterus; int.
90	Weber.	....	....	....	....	....	....
91	James P. White.	Buffalo, Sept., '64.	Com.	Tumor.	....	....	Fib. cyst uterus; int. ped.
92	Do.	Do., Oct. 6, 1879.	"	Ut., ov. & tumor.	....	Long	Do.; 18 lbs.; hemorrhage; adhesions.
93	R. W. Wilcox.	N. Y., Nov. 9, 1882.	"	Tum. & p. of uterus.	....	6 in.	Cystic myo-fib.; 12 lb. inters. ad. to oment.
94	T. Wood.	Cincinnati, Ohio, Oct. 31, 1866.	"	Uterus.	....	Long	Fib. of ut.; w. 4½ lbs.; pedicle.

Condition of patient: <sup>1</sup> Good <sup>2</sup> emaciated; <sup>3</sup> bad; <sup>4</sup> not good;

## AND CANADA—Continued.

Antiseptics.	Operation.	Age. Married or single.	Previous operation.	Result.	Reporter and where reported.
Ether.	Lig. cut short; tent in womb.	.....	Tapped	Died in 48 hours.	....
"	Lig. ....	.....	"	D. 32 h.: peritonitis	Peaslee, Tr. N.Y. Ob. So., May 16, '76, Am. J. Ob., ix., '76, p. 653.
Chloro.	Lig. thro' va.; actual caut. used!	44, M	.....	D. 2d d.: exhausti'n	Peck, Iowa State Medical Society, Medical and Surgical Reporter, xxi., 1869, p. 212.
"	Ecraseur. <sup>2</sup>	47, M	.....	D. 3 h. after; shock.	Pope, St. Louis M. & S. J., iii., 1866, p. 293, Pozzi, p. 90.
Ether.	. . . <sup>3</sup>	45, S	....	D. few moments; h'm	Sands, N. Y. Path. So., June 14, '65, N. Y. M. J., ii., '62, p. 188, M. R., ii., '67-8, p. 57.
....	....	.....	.....	Recovery.	Sawyer, Am. J. Med. Sc., lx., 1860, p. 51.
Ether.	Lig. outside.	43, M	.....	D. 6th d.: peritonitis	" " " " " 46.
....	....	.....	.....	....	Medical and Surgical Memoirs, Baltimore, 1831, p. 231.
Ether.	Clamped cerv.; écr.	47, S	.....	Recovery.	Storer, American Journal Medical Sciences, li., 1866, p. 110.
....	Enuclea'n	.....	.....	D. 24 h. after; hem	Sullivan (two cases), Am. Journ. Med. Sc., li., 1866, p. 115, foot-note.
....	....	.....	.....	....	Thomas, Diseases of Women, 1872, p. 505.
....	Drain age clamp.	28, M	.....	Recovery.	Mann, N. Y. Ob. So., Dec. 9, '73, Am. J. Ob., vi., '73-4, p. 622.
Ether. <sup>4</sup>	Sec. thro' up. vag., dr. cl'p	42, S	....	D. 2d day: hemorr.	Thomas, Dis. of Women, p. 520, Jane-way, Am. J. Ob., ix., '76, p. 472.
Carbolic spray.	Lig. .... <sup>5</sup>	40, M	.....	....	Thomas, Tr. Ob. So., N. Y., Dec. 15, '78, Am. J. Ob., xii., '79, p. 355.
....	Stump dropped.	54	.....	Recovery.	Thomas, N. Y. Med. J., xxxi., 1880, p. 198.
....	Clamp.	45	.....	....	Garrigues, "Diag. Ovarian Cysts," N. Y., 1882, p. 60.
....	Clamp in wo'd; caut.	.....	..... <sup>6</sup>	Death: peritonitis	New York Medical Journal, xxiii., 1881, p. 695
Lister.	Caut. clm. in wound; morcelleme't dr.	.....	..... <sup>7</sup>	Recovery.	Do.
Carboli'd sponges, ch. & eth.	Péan's for. st. in wo'd	34, S	.... <sup>8</sup>	Recovery.	Davis, Ob. J., London, ii., 1874-5, p. 634.
....	Lig.; cut close.	42, M	.... <sup>9</sup>	Died 54 h. after.	Trenholme, Am. J. Ob., x., 1877, p. 452.
....	....	39, S	....	Died fifth d.; exhaus	Trenholme, Can. Medical and Surgical Journal, xi., 1883, p. 616.
....	....	.....	.....	Death.	Thomas, Pozzi.
....	Tapped cyst.	45, S	.....	Death: exhausti'n	C. C. Lee, New York Medical Journal, xiv., 1871, p. 459.
....	Dr. tubes: enucleat'n	45, M	.....	Died 32 h.: shock.	Granger, Buffalo Medical & Surgical Journal, xix., 1879-80, p. 297.
spray in r'm: eth.	Stp. & clp.; low. angle	63, M	.... <sup>10</sup>	Recovery.	Wilcox, St. Louis Medical & Surgical Journal, xlv., 1883, p. 622.
Chloro.	Lig. lower angle.	38, W	.... <sup>10</sup>	"	Wood, Cincinnati Lancet and Obs., x., 1867, pp. 1 and 110

<sup>5</sup> emaciated; <sup>6</sup> edema, anemia; <sup>7</sup> edema, anemia; <sup>8</sup> fair; <sup>9</sup> bad; <sup>10</sup> good.



III., 1870-71, p. 308, and "Ovarian Tumors," N. Y., 1872, p. 147. The *Medical Record*, II., 1867-68, says that the uterus and one ovary only was removed in Sand's case. The case reported by Sawyer as being performed in San Francisco, name of operator not given, says that it was done by an old and experienced surgeon. Does he refer to Dr. Nelson? This seems to be the case referred to by Boinet, p. 462. Nathan Smith's case is quoted by many as one of recovery, but there is nothing in the original to sustain this statement. At the meeting of the American Gynecological Society, Sept., 1882, Dr. Thomas said that he had done thirteen gastrotomies, with seven recoveries and six deaths. I am unable to find full reports of all of these cases, so that I am unable to tabulate more than eight. In the summary of individual statistics, I have given Dr. Thomas credit for thirteen cases.

(To be continued.)

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QUARTERLY REPORT ON THE PROGRESS OF OBSTETRICS  
AND GYNECOLOGY IN GERMANY.

BY

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IN complying with the request of the Editor to prepare a quarterly report on the progress of obstetrics and gynecology in Germany, I think it will subserve the best interests of the JOURNAL if I do not enter into too much detail, but rather review connectedly those questions which have been discussed in the literature and in the personal intercourse of German obstetricians and gynecologists during the time covered by my report. It is self-evident that prominent details will likewise be considered. I believe, however, that my readers will thus obtain a certain insight into the present state of several questions and views of matters obstetrical and gynecological in Germany.

There is, in the first place, one of the preliminary questions in obstetrics, if I may so term it, which has caused a lively expression of opinion among German obstetricians: whether it is possible to compensate for a defective antisepsis by an energetic disinfection carried out with sufficient vigor. Or, to make

my meaning clearer, whether a prolonged abstinence from obstetrical manipulations after contact with infectious matters belongs absolutely to the demands of obstetrical antiseptics, and whether it is not possible to obtain by thorough disinfection the same advantages as by abstention. Owing to the manifold conflicts arising between the demands of a strict antiseptic procedure and the requirements in practice, the discussion of the question could not be avoided, whether it is not possible to purify one's self sufficiently by rigorous disinfection, so as to be able to take obstetric cases even if the demands of antiseptics had not been completely complied with. In reply to a communication from the Erlangen clinic by Swiecicki, in which abstinence for at least a week was demanded, on account of a certain case of infection, Loehlein (Berlin), at a meeting of the Berlin Obstetrical Society, on the strength of extensive practical experience, expressed himself to the effect that, owing to the impossibility of complying with such a demand in practice, an energetic disinfection, carried out according to certain principles, must and does suffice. In the discussion following the reading of this paper, nearly all the participants (Schroeder, Martin, Ruge, and others) concurred in the opinion that complete disinfection is possible; Fritsch and Wiener (Breslau) subsequently expressed themselves to the same effect, as Ahlfeld had done before. At the Breslau clinic, when still under the management of the late Prof. Spiegelberg, they even went so far as to admit the students, immediately after dissection, to cases of labor—a procedure which indeed must give rise to serious objections, and probably is not imitated at any German clinic. The result of the entire discussion may be summarized in that the majority of German obstetricians, basing on their extensive practical experience, believe a thorough disinfection after contact with infectious material to be possible, although as a general rule, and particularly in clinical instruction, the strict demands of antiseptics are to be adhered to.

Another question, most intimately related to the preceding, has again been stirred up: Which is the best, cheapest, and most agreeable disinfectant in obstetric practice? Since the investigations of Koch have demonstrated the extraordinary antizymotic and disinfectant qualities, even in very dilute solutions, of corrosive sublimate, and since the virtues of this agent have been most warmly acknowledged in the reports of a number of large surgical wards, German obstetricians, though tardily, have resolved to employ it likewise. Reports have been submitted from the Breslau obstetric clinic (Topolski), from that of Berlin (Broese), of Freiburg (Wiedow), and of Heidelberg (Kehrer), which unani-

mously concur in the opinion that the antiseptic qualities of 0.1% solutions of bichloride of mercury are in all cases amply sufficient for obstetrics. It is probable that very much smaller percentages (0.2:1000) will suffice. Hegar, according to a communication read before the recent meeting of German naturalists and physicians at Freiburg, employs in laparotomies solutions as dilute as 1:10,000. Hence the question as to the strength of the solutions to be employed is still undecided, as is also that of the dangers possibly connected with the application. Practical experience will have to solve these questions, and we may soon look forward to additional communications on this subject.

In still another field, the question of prophylaxis has called forth an active exchange of opinion, viz., the prophylaxis of blennorrhea neonatorum. Credé has repeatedly published the excellent results obtained by him at his clinic (Leipzig) with his prophylactic method (instillation into the conjunctival sac of two-per-cent solution of silver nitrate immediately after birth). In the mean time, this procedure has been tested also at other large maternity institutions (Stuttgart, Vienna, Berlin). In Stuttgart and Vienna (communications by Bayer, Koenigstein, and Fuerst) very good results were obtained; at Vienna, they were so satisfactory that Credé's method has been made obligatory at all foundling and maternity institutions of Lower Austria by an order of the authorities. According to Fuerst's reports, it seems to be better to make the instillations immediately after birth than a short time afterwards, while Credé himself lays no particular stress on this difference in time. The results obtained at the Berlin clinic have likewise been very good. Whether this procedure is to be recommended in private practice, and especially if it should be intrusted to the hands of the midwife, is still a matter of great difference of opinion, and will undoubtedly give rise to an active exchange of views within a short time.

Although this novel prophylactic procedure of this prominent obstetrician seems likely to be gaining ground, it is unquestionable that a certain reaction has set in against the method of the immediate expression of the placenta after labor, introduced by the same authority twenty or twenty-five years ago. As long as twelve or eighteen months since, various voices have been raised (Runge, Dohrn, Schultze), calling attention to the disadvantages of an over-hasty expression of the placenta, so that Credé himself has been induced to again carefully limit the procedure introduced by him, and to recommend it on the strength of his experience. Quite recently, the manifold dangers of this method have been very minutely exposed by Ahlfeld ("Reports and



Investigations from the Obstetric Clinic at Giessen, 1883"). The author seeks them chiefly in the liability to secondary hemorrhages and the retention of membranes, which latter he considers to be one of the most frequent causes of puerperal diseases. His results with the strictly expectant method do not exactly speak in favor of the correctness of his theoretical deductions. However, at the meeting of German physicians at Freiburg, I had the opportunity of hearing that both Hegar and Freund prefer an almost absolute expectancy to Credé's method. Still I believe that at the majority of the German clinics, as well as in private practice in Germany, the judicious employment of speedy expression of the placenta will continue to be preferred.

In the field of practical obstetrics, there were mainly two questions relating to the gravest obstetrical affections which have been largely discussed in the publications and at society meetings, viz., the question of the best treatment of placenta previa, and that of rupture of the uterus during labor. As regards the former subject, I myself have had such extraordinarily good results at the Obstetric Polyclinic by strictly carrying out the principle of premature combined version and slow extraction that, about one year ago, I accordingly recommended the procedure most warmly to my colleagues. Of thirty-seven cases I lost but one, in the third week of the puerperium. This uncommonly favorable result has been most strikingly confirmed by a communication from Dr. Behm, assistant to the Obstetric Polyclinic of Prof. Guserow, at Berlin. This gentleman, in June of this year, reported at the Obstetrical Society of Berlin concerning the results obtained in placenta previa by the application of the same principles, and has recently published them in the *Zeitschrift f. Gynäkologie*. Of forty-five cases treated according to this method, he did not lose a single one. Accordingly, that is, in a total of eighty-two cases of placenta previa treated strictly by the method outlined above, one death, or a mortality of 1.2 per cent. This result is so brilliant as to need no further comment, for thus far it has been equalled by no method or any operator. In the execution of the method we differ in so far as Behm, after performing combined version, leaves the further course entirely to nature, while I am in favor of assisting these processes by moderate extraction. Theoretically, the strict expectant plan appears decidedly more important; but in practice it will frequently lead to the most serious difficulties. Regarding the fate of the children, my mortality is sixty-three per cent; that of Behm, 77.5 per cent—indeed, very high figures. But the results for the children are not much

better with any method; a mortality of sixty per cent is given by all authors; and in Germany the principle is universally recognized, that the maternal and infantile life eventually are not absolutely equivalent. I believe and hope that henceforth, in Germany, the principle of premature combined version followed by the expectant plan in placenta previa will generally prevail. Despite these absolutely good results, propositions for the treatment of placenta previa by disinfected sponge tents have again been made in the latest number of Volkmann's *Sammlung* and at the Freiburg meeting of German physicians by Dr. Jungbluth, of Aix-la-Chapelle. The meagre material (six cases) on which the author bases his theoretical deductions does not by any means harmonize with the absolute certainty with which he praises his procedure. It is hoped that this return to sponge tents will find no further imitators.

As regards the second subject above mentioned, the after-treatment of rupture of the uterus during labor, this question seemed to have been pretty well settled, especially by the publication of the good results obtained in these cases at our clinic (Schroeder, Berlin), when treated by drainage. Several cases having terminated unfavorably, in spite of drainage, and another having recovered without drainage, although the rupture had been very extensive, I have been induced to subject the cases thus far recorded to a critical examination. The result was, that the great majority of these cases were such as would naturally have given the most favorable prognosis. They were either recent ruptures not complicated by the escape of the child, or such in which the peritoneal investment had remained intact, *i. e.*, cases which in themselves offered relatively the best chances. That such fortunate cases come more frequently under observation nowadays can easily be explained by the great advances in antisepsis and in obstetrics; but it does not appear from the material at hand that drainage represents an advance in the treatment of the most unfavorable cases, with complete escape of the child into the abdominal cavity. On the other hand, the material suffices to demonstrate that in the former, simpler cases any graver interference (laparotomy, etc.) is positively contraindicated. At the recent Freiburg meeting, during the discussion of this subject, this view was fully indorsed by Prof. Kaltenbach, and various communications were made by others (Mueller, of Berne, and Schutz, of Rostock) which confirmed its correctness.

In the field of pelviology, two papers chiefly require mention. The one is by J. Veit who, basing on numerous examinations of pelvis from the new-born, attacks the view defended mainly by

Fehling and Kehrer, of the fetal predisposition to certain pelvic anomalies. Furthermore, various communications by Fr. Neugebauer on spondylolisthetic pelves. By dint of unwearying attention devoted to this subject, the latter author has indeed succeeded in demonstrating, in the German collections, as well as in a number of living persons, a previously unsuspected large number of spondylolisthetic pelves, and in proving the correctness of his view. The latter culminates in this, that these pelves arise, not, as formerly supposed, from a sliding-down of the entire fifth lumbar over the first sacral vertebra, but by a traumatic separation between the body and the arched process of the fifth lumbar vertebra, by which the body loses its support and, together with the vertebral column resting upon it, glides into the pelvis. The careful and diligent researches of Neugebauer do not admit of any doubt as to this etiology.

Finally, mention might be made of the interesting experiments, reported in the paper by Ahlfeld above alluded to, respecting the absorptive power of the internal surface of the uterus, on the several days of the puerperium, and under varying states of contraction—experiments of material importance to the theory of the so-called late infections and late affections of the puerperium. He arrives at the positive result that, in the case of a contracted uterus, the absorption is very much less than when the organ is relaxed, and that the absorptive power is greatest from the third to the sixth day. The experiments were made with dilute solutions of salicylic acid, the absorption being proved by the demonstration of the drug in the urine.

These are the points in the field of obstetrics which, within the the last few months, have excited the interest of German obstetricians, and have given rise to literary or verbal exchange of opinion.

In general gynecology, the greatest interest is still manifested in all thorough contributions to the subjects of menstruation and its connection with ovulation, on account of the many equally important and undetermined questions connected therewith. Two anatomical papers have appeared here: one by Wyder, on the condition of the mucosa of the uterus during menstruation; and another by Leopold, investigations into menstruation and ovulation. The former has chiefly confined himself to the microscopic examination of the carefully collected uterine contents at the time of menstruation, and has again very critically sifted the anatomical communications published before. In the main, the result he reaches is, that the facts reported by Moericke and Sinéty, as to the complete preservation of the mucosa during menstruation,



can be confirmed in many cases; but that withal a partial exfoliative process of the uppermost layers is unmistakable. This process affects especially those portions beneath or into which the menstrual blood has exuded. Wyder likewise decidedly denies the truth of Kundrat and Engelmann's doctrine of a primary fatty degeneration of the uppermost layers of the mucosa.

Leopold's paper has for its object the anatomical demonstration of the temporal relations of ovulation and menstruation. To this end, he has managed to secure twenty-nine pairs of ovaries from women who had died suddenly or had been spayed, the specimens dating from the most various days of a menstrual interval. The material, having been carefully sifted, was examined anatomically. Without entering into details, let me briefly state that, according to these investigations, a follicle may rupture at any time, and hence conception ensue, without regard to menstruation. Furthermore, that corpora lutea, therefore, may form outside of the time of menstruation, just as well as the latter may occur without the formation of a corpus luteum. According to Leopold, the appearance of menstruation is dependent exclusively upon the state of the mucosa of the uterus, entirely independent of the ripening of the follicles.

At all events, this course pursued by Leopold is the only one enabling us to approach the solution of this important question.

In reference to the more restricted field of gynecology, it is chiefly operative questions with which German gynecologists are engaged—questions relative to the precision of the indication and the technique of the capital gynecological operations. German gynecologists strive pre-eminently to define the indications and the technique of myoma operations with a view to their perfection and acceptability. In the first place, as regards the treatment of fibromyomata by oöphorectomy, which has been chiefly advocated by Hegar, in his well-known publications, this subject has been recently again discussed by the latter and his assistant, Dr. Wiedow, at the Freiburg meeting of German physicians. The number of successful operations performed by him at present amounts to eighteen. Hegar availed himself of the opportunity of presenting a number of patients, part of whom had been operated upon years ago, who showed a perfect result, insofar as the hemorrhages had ceased altogether, and the tumors had demonstrably diminished in size. P. Mueller, too, reported some successful results of spaying for myomata, but no other German gynecologist seems to be able to refer to a larger number of cases. Prof. Schroeder has, of late, particularly labored to perfect the technique and limit the indications. As regards the latter point,

to begin with, there has appeared from Schroeder's clinic a paper by Lomer: "On the Enucleation of Myomata," in which the author pre-eminently strives, on the strength of quite a number of operations, to answer the question which myomata are proper subjects of operative treatment by laparotomy, and which are removable per vaginam. The author concludes that the latter operation is adapted chiefly to cervical myomata, and to those of the submucous and interstitial varieties which have been partly delivered into the vagina. Where the cervix is intact, enucleation is to be rejected as too dangerous, and should be replaced by the abdominal operation. In cases of labor complicated by cervical myomata, enucleation of the latter should first be aimed at. This latter remark has been caused by a probably unique case of its kind which terminated very happily, and which I shall briefly report. A patient, in the third month of pregnancy, was sent to Schroeder for the induction of premature labor, because the whole of the lesser pelvis was filled by a cervical myoma. The patient was told to return toward the end of pregnancy, for the enucleation of the myoma. Schroeder performed the operation a short time before term: the enucleation of the tumor, from twelve to sixteen centimetres in size, succeeded easily, and the patient then passed through an almost normal labor and puerperium. The result of this treatment appears all the more satisfactory when contrasted with an almost analogous case published, some time ago, by Beumer, of Greifswald, in which the Cesarean operation was performed with a fatal issue. In the former case, the woman was at the same time completely cured of her myoma.

In thus establishing the indication for the operation through the vagina, Schroeder has at the same time so far perfected the technique of laparotomy for myomata that, for him, there is no longer any inoperable fibromyoma. While he draws the lines of the indications for the operation rather strictly, as he has repeatedly done on former occasions, the number of operations performed has very materially increased. And with the growing numbers and the perfection of the technique of the operations, the results have likewise become much more favorable. The last of these have been published in the Transactions of the British Medical Association for 1883.

Almost insuperable difficulties have hitherto been presented by subperitoneal tumors developing in the pelvic connective tissue, on account of the impossibility of forming from them a tolerably useful pedicle. Schroeder at present operates on them in such a way as to divide the peritoneal covering of the myomata, after ligation of the broad ligaments, and to enucleate them from

the pelvic connective tissue. In this way it is always possible to form a good pedicle (consisting chiefly of the cervix or the lower portion of the uterus), which is constricted with a rubber tube. The tumor is next cut off above the latter, the pedicle trimmed, the large visible vessels are ligated, then the whole stump is stitched together with tiers of sutures (Etageinnäthe), so that finally the peritoneal layers come together. This method of treating the pedicle has undoubtedly the greatest number of adherents among German operators. Oöphorectomy for myomata, although not altogether rejected by Schroeder, has yet been done but once by him.

In reference to spaying, aside from that for fibromata, only isolated observations are recorded. This operation obviously has not many adherents in Germany, or else the final appreciation is in course of formation. At Freiburg, Hegar likewise presented a number of castrated women (for dysmenorrhea, severe perimetritic troubles, etc.), the greater part of whom had been cured, but some failures were not lacking. A number of such castrations, for the well-known indications given by Hegar, have been performed and published by Taufer; in part the result was dubious. In Schroeder's clinic, too, a number of castrations have been performed in the last few years, for very pronounced implication of the ovaries. A detailed report will probably be rendered within a short time.

Of the graver gynecological operations, there is yet colporhysterectomy, extirpation of the uterus through the vagina, the technique and indication of which still interest German gynecologists. Freund's method of operation is pretty well abandoned by all operators, or confined to a few exceptional cases. Prof. Freund himself, to be sure, informed me at Freiburg that he still performs it together with the removal of the carcinomatous glands. But otherwise, in Germany, the vaginal extirpation is generally performed, with good results *quoad vitam*. A universal method has thus far not been arrived at, and the latest publications in this field (Schatz, of Rostock; Fritsch, of Breslau), are chiefly devoted to propositions to facilitate the technique. Schatz's results (three deaths in ten cases, with the same number of lesions of the ureters) are not exactly very favorable. Moreover, he has certainly placed his indications too broadly if he operates on cases with carcinomatous infiltration of the parametria. He pleads chiefly for a median division of the posterior vaginal wall in order to open the lowest part of Douglas' pouch; he states that he is opposed to stitching the layers of the peritoneum and to drainage. His results, however, do not support his



propositions. Fritsch recommends, in the main, to dissect out first the lateral portions of the uterus as high as possible, and then to invert the uterus forward. No statistics accompany the publication. Schroeder proceeds still almost exactly according to the method recommended by him: inversion of the uterus through the widely opened pouch of Douglas, with subsequent ligation and drainage. By this method I myself have lost, of six in part very difficult operations, one by septic infection.

On the whole, these are the later subjects and publications in the fields of obstetrics and gynecology in Germany within the last few months. I hope that the readers of this JOURNAL will be able to form from this report a clear idea, to some extent, of the state of the pending questions.

BERLIN, October, 1883.

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## ABSTRACT.

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**1. Fraenkel (Vienna): Communications from the University Clinic of Prof. Billroth at Vienna Concerning Dermoid Cysts of the Ovaries, Together with Dermoids (Containing Hair) in the Peritoneum (Wien. Med. Wochen., XXXIII., 28, 29, 30).**—The author, in this paper, reviews the history of the investigation of dermoid cysts from the time of Lebert, stating, in a concise manner, the conclusions of the latter, together with those of Heschl, Waldeyer, and Lücke. The latter advanced three propositions: 1. That these cysts are limited to certain regions of the body, as the orbit, the floor of the mouth, the neck, and certain internal organs. 2. It is especially noticeable that these tumors undergo active development at the time of puberty. 3. At a certain period in fetal life, there occur, normally, involutions or inclusions of the external blastodermic layer, in order to the formation of certain organs, and these included portions are separated from the main portion before the final closure of the cavities of the body. If we assume that inclusions of this layer take place in a manner which is abnormal, and not in accordance with the end apparently in view for such processes, but which occur *at the same time* with the normal process, then we can readily understand how embryonal forms in the middle blastodermic layer can pass inward, and develop into epidermoidal formations. Also, since the development of the external blastodermic layer takes on a new form at the time of puberty, in the development of the beard, etc., an accelerated growths of dermoid cysts at this time need not be surprising. Lücke admits, however, that he is at a loss to explain the presence of bone and cartilage in dermoids of the testicles and ovaries. Waldeyer's theory as to the origin of ovarian cystomata is well known, and he assumes the same method of development and the same element of development in the history of dermoid cysts, which runs entirely paral-

lel to the course of development of myxoid cystomata, in which the newly formed epithelial cells assume a new, that is, an *epidermoidal* character. In explanation of this new phase of development, Waldeyer expresses as his opinion that every ovarian epithelial cell may become an *embryo cell* (Eizelle), and every *embryo cell* may produce all possible cell characters, and that the horny layer is the first product of segmentation. This is an illustration of the parthenogenetic theory of development; but even this is not expansive enough to cover those cases in which dermoid cysts are developed in organs which contain no epithelial cells, and hence nothing which can be transformed into an *embryo cell*. Lücke's theory, consequently, appears the more reasonable, and the author pieces out its insufficiency in respect to the origin of bone and cartilage by supposing that particles of the primitive germinal matter (*Urwirbelmasse*), from which bone and cartilage are developed, are included (presumably by accident) in the folding in of the cutaneous, or horny layer, and thus all the requirements for the development of the dermoid cyst are satisfied. His revised theory may be stated, then, in the following terms: 1. Dermoid cystomata are pathological new-formations, the development of which rests upon atypical processes of inclusion of the external blastodermic layer, with subsequent separation from the main portion. 2. These inclusions may occur either in the domain of the external blastodermic layer alone (as superficial dermoids); or 3. There may be involution of the external into the middle blastodermic layer (deep dermoids). 4. The presence of osteoid tissue in dermoid cystomata is conditioned upon the inclusion of osteogenetic elements from the primitive germinal mass contiguous to the layer which suffers involution, which occurs at the same time with that involution. The foregoing is an introduction to the narration of two quite extraordinary cases, in the first of which dermoid cysts had developed from both ovaries, and in great numbers from both the parietal and visceral peritoneum. The latter were quite small, seldom larger than a walnut; many of them were provided with long and slender pedicles, and contained hair and sebaceous matter. In the second case, the cyst for which the operation was performed had developed from the right ovary, and smaller growths were at different points similar to those which existed in the other case. Fatal complications in both operations led quickly to death from acute septic peritonitis. Concerning the origin of the growths in these two cases, the author submits that either those which were developed from the peritoneum grew independently of the ovarian growths, or else the latter were the cause of the former. In case the first hypothesis is correct, there must have been an inclusion of a portion of the external blastodermic layer within the pleuro-peritoneal cavity. If the second hypothesis be the correct one, either germinal elements may have escaped through a rupture in the wall of one of the ovarian cysts, to be implanted upon the peritoneum, or the ovarian cyst wall being very thin, a kind of infectious contact may have resulted in the secondary peritoneal formations, the peristaltic movements of the intestines acting as an assisting medium. The practical point concerns the removal of such growths, which is very difficult, especially when adhesions are present, as occurred in both the author's cases. More than ordinary care is necessary to prevent the entrance of any of their noxious contents into the abdominal cavity, and the prognosis should always be a guarded one.

# DEPARTMENT OF DISEASES OF CHILDREN.

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EDITED BY . . . GEORGE B. FOWLER, M.D.

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## ORIGINAL COMMUNICATIONS.

### TRACHEAL DIPHTHERIA.

BY

J. FEWSMITH, JR., M.D.,  
Newark, N. J.

THERE is perhaps no class of cases to which it is more difficult to give a designation which shall be understood by all alike than the various forms of laryngeal stenosis in children. In making a report of a case which has been of great interest to me, I was met, at first thought, by the difficulty of finding a name. Perhaps tracheal diphtheria will answer as well as any other, but this is what our French brethren would call croup—and rightly so in this case, for croup, strictly and etymologically speaking, means simply *stridulous breathing*, and that would quite accurately describe the case as first seen by me. But as the word *croup* to-day means nothing, or perhaps I should be nearer the truth if I should say means anything, it is scarcely to be considered a scientific term. It is really astonishing and, in the present very general spread of the literature of France, Germany, and England, very perplexing to observe the entirely different meanings and uses of the word croup. As it has been my task to look into the matter somewhat, in the last few weeks, perhaps I may be permitted here to concisely state the various uses of this term and others relating to laryngeal troubles, in the different countries.

Here in America, the majority of physicians speak of false croup, croup, membranous croup, and diphtheritic croup, though the tendency, I think, among the better writers is to overlook the clinical variations, and, on the ground of the pathology and etiology, consider membranous and diphtheritic



croup as the same disease. In France, the term croup is now used almost entirely to signify laryngeal or tracheal diphtheria, and what we would here call true or inflammatory croup is there much better designated as *laryngite aigue catarrhale*, while our false croup, so-called, correspondends to their *laryngite* or *angine striduleuse*; and spasm of the glottis, the real laryngismus stridulus—not often, I think, seen here, but frequent in countries where rachitis abounds—is called *pseudo-croup nerveux*. In Germany, they speak of false croup, under which may be grouped all cases of inflammatory laryngitis, better called laryngitis catarrhalis, while by the name genuine croup they mean membranous laryngitis, in contradistinction to both catarrhal and diphtheritic laryngitis, though the tendency there, as here, is to give up the latter distinction. They also recognize laryngismus stridulus or *Kehlkopfkrampf*, meaning thereby the general nervous spasm spoken of above. But what can we say of the use or misuse and mixture of terms, at the present time, in England? The term croup, as employed by some writers, seems to designate what they consider a separate disease, but what others call “a mere literary composit of diseases, pathologically different from one another.” The profession is largely divided as to the existence of membranous croup as distinct from diphtheria, the advanced minds inclining to consider the former as merely a form of the latter. They speak of false croup, meaning stridulous laryngitis—a slightly inflammatory condition, with attacks of stridulous breathing, etc.—in fact, our ordinary croup; also laryngismus stridulus, to which the name of false croup is wrongly applied, since this disease, as understood in England and Europe, is the general constitutional nervous disease better called cerebral croup, and not frequent here in America. Then they have acute catarrhal laryngitis, to which, strange to say, they are apt not to apply the name croup at all, except when it is confounded with the so-called membranous croup. Then, to make confusion worse confounded, there are now some writers, followers of Brétonneau, who use the simple term croup strictly in the French sense, meaning laryngeal or tracheal diphtheria. In this latter sense, the word croup would have been the designation for the case I am to report. In an abstract of an article from the *Jahrbuch f. Kinderheilkunde*, by Dr. Karl Dehio

appearing in this number), the importance of a more systematic and uniform use of these terms is made very manifest. One not knowing the German use of the terms, false and genuine croup, would be misled.

The case which interested me was this:

I was called, on October 27th, to see Belle V. H., æt. four years. The following was the history of the case: Family phthisical; mother decidedly so; and of four children who have died, three have died from tubercular troubles. In March last, Belle and the baby, eighteen months old, had scarlet fever, from which both recovered entirely. One month after entire recovery, in April, the baby was taken sick with nausea, vomiting, and fever. There was a little croupiness at night, but this passed away, to return again in about ten days and then continue, growing daily worse, till the baby finally died, about ten days later, having been sick altogether a little over three weeks, and the last four days being agonizing, as she could neither swallow nor breathe, "*just exactly as you see Belle,*" as the mother remarked. Belle had always been well (except the scarlet fever), though not very robust. About the last of September and first of October, she complained of toothache and earache, and for a few nights was croupy. The croup then passed away, and there was swelling, redness, and pain of hands and feet; in short, as the attending physician, Dr. A. Ward, said, mild inflammatory rheumatism. This lasted one week, and as it passed away, the respiration became difficult again, being at first simply "snoring" at night, getting gradually worse, and for the last ten days growing much worse, treatment having absolutely no effect. For two days before I saw her, the dyspnea had been intense, and she had been unable to swallow. I found the child pale, rather than cyanotic, weak; pulse 130; temperature normal; suffering from extreme dyspnea; scarcely possible deglutition and aphonia. She was bright and cheerful withal, and there were absolutely none of the signs of constitutional infection by diphtheria. Not having a laryngoscope at hand, a positive diagnosis was postponed till the next day, though a positive suggestion of tracheotomy as the only treatment was made. It was decided, however, to wait till morning, and, on the possibility of there being some paralysis of the abductors, strychnine was given in full doses and electricity applied. My diagnosis, from the history, and the non-febrile condition of the patient, leaned to two things: paralysis, or some foreign growth in the larynx, possibly tubercular. On the morning of October 28th, the child was worse and sinking. She was laryngoscoped by Dr. E. J. Ill and myself. In her gasping condition, it was difficult to get a good view, but Dr. Ill and I both thought we saw a decidedly foreign mass projecting into the larynx below the cords; and there was no doubt that the latter opened and closed regularly—no paralysis. We could see no signs of membranous deposit, and, in fact, the history gave us no reason to suspect it.

As the child was sinking, not much time was lost in discussion, but a hasty diagnosis was made of new growth in the larynx (possibly tubercular), and tracheotomy was at once done—and none too soon, for, as I was considering, after getting down to it, what to do with a very greatly enlarged thyroid isthmus, the child's respiration ceased entirely, and the operation was completed by a single plunge of the knife and rapid introduction of the tube. The blood was drawn out of the trachea, and artificial respiration finally revived the patient. She had a quiet night, and October 29th passed uneventfully; highest point of temperature, 100; taking nourishment well. October 30th, in the morning, she had a rise of fever to 103; pulse 140. Ordered quinine and syrup of hypophosphites. In the afternoon, the tube became plugged, and, on reaching the case, I thought the end had come; but, on irritation with a feather, a piece of very thin and soft *false membrane* was coughed up, and respiration gradually restored. There was, at 9 P.M., less fever, 100°; pulse 130; but a very general bronchitis. The surface of a blister which had, a few days before, been applied to the front of the neck had a curious, yellow-grayish appearance. Stimulants were increased, and, in addition to the ordinary steam which had been used freely, a constant steam spray of lime-water and carbolic acid was directed against the tube, the patient herself begging for it, and crying if it was stopped even for a short time. She was still bright, played with my watch, took nourishment well.

October 31st. Whole surface of blister covered by decided diphtheritic membrane. Temperature 101; pulse 140; trachea and bronchi becoming plugged. Patient weaker, but mind clear. Same treatment.

November 1st. Being sick myself, I did not see the patient, but she gradually grew weaker through the day and died in the afternoon.

Sickness also kept me away from the autopsy, which was kindly performed by Drs. A. Ward, E. J. Ill, and Corwin, who have furnished me the following account:

Rigor mortis fairly marked. Considerable emaciation. The neck presented anteriorly a surface, three by three inches (the blister), denuded of epidermis, and covered with a layer of yellow-grayish deposit nearly a line thick. The color of this was perhaps modified by the iodoform which had been powdered upon it. At about the centre of this space was a vertical wound, 1½ inches long, the sides of and tissues surrounding which were infiltrated with grayish deposit. This wound opened into the trachea through the third and fourth rings. On removal of the larynx and adjacent parts, the thyroid gland was found much enlarged. The epiglottis presented no change except well marked pallor. The mucous membrane between the true and false vocal cords presented a number of shallow depressions (ulcerations), as if scooped out. Underlying the mucous membrane of each false cord was a string of small indurations marked by a row of white glistening points, about the size of mustard seeds. The specimen is now being prepared for microscopical examination of these,



to determine whether they are tubercular. From the rima glottidis downward, the larynx and trachea, as far as examined, were invested with a firm, ashen-colored false membrane about a line in thickness, which could be stripped from the mucus membrane. No other viscera were examined.

In looking back over the case, several questions suggest themselves. Was there any connection between either Belle's case or the baby's and the scarlet fever? The only points which would seem to argue that there was, are the nausea, vomiting and fever of the baby's case, and the rheumatism in Belle's case. I think all connection with the preceding fever may be excluded. Was there any connection between the two cases, which so closely resembled each other? This is a difficult question. If both were diphtheritic in character, it was certainly—as we shall consider later—a peculiar diphtheria and of slow development. But is it possible that the second case should show so long as six months after the first one? Is it possible that contagion should remain in a house full of children for six months, and no one be touched by it until the end of that time? Dr. A. Ward, who attended the first case, was, at the time of its death, not of the opinion that the disease was diphtheritic, though he was somewhat at a loss for a diagnosis. He says that the two cases were remarkably similar, and that in each the impression received in the beginning was rather of asthma than of croup. I am inclined to think there was no etiological connection between the two, though I believe the disease was the same in both. What now was it? What is the explanation of these two cases? I think the key to this is to be found in the article of Dr. Dehio, published in abstract in this number, and entitled the "Clinical Significance of acute subchordal swellings in the laryngitis of children," and also in an article by McKenzie, of London, on "Subglottic Chronic Laryngitis," and cases reported by Rokitansky, Turck, Schroetter, Gerhardt, Rauchfuss, and others. With the exception of Rauchfuss, and perhaps Gerhardt, this subglottic, or as Dehio and Rauchfuss rightly call it, subchordal laryngitis, has been described principally in a chronic form and as a separate and distinct disease. McKenzie's description of the chronic form is worth noticing in this connection. "Chronic laryngitis in the subglottic region gives rise to considerable thickening of the tissues, especially at the under sur-

face of the vocal cords. When the disease is well established, the tumefaction often presents the appearance of a second vocal cord immediately below the true vocal cord. The color of the hypertrophied tissue is generally whitish-gray, but it is occasionally red. Hoarseness is the first symptom, but complete aphonia usually occurs early. Dyspnea is also perceived as soon as there is any considerable amount of thickening, and attacks of urgent suffocation sometimes occur. In many cases the patients are of marked scrofulous constitution." McKenzie also makes an indistinct division between the edematous form and true hypertrophy, and under the head of edema of the larynx, speaks of subchordal edema as sometimes occurring in tubercular patients. [It is true that this occasionally occurs in the onset of scarlatinal dropsy, but its course then is very acute, and the accompanying symptoms would leave no doubt as to the diagnosis.] Now this chronic subglottic laryngitis has been recognized for some time, but in all the cases published, even down to those of Burow in 1875, there has been but little said of the acute form of the disease. In order to avoid repetition, I am glad to be able now to call attention to Dr. Dehio's article, published in this same number. To Rauchfuss probably belongs the credit of showing that subchordal swelling plays an important part in the laryngeal stenoses, and that it is not necessarily a disease per se, but may be the prime factor in other troubles, but to his assistant, Dr. Dehio, belongs the credit of showing its very common existence in all the laryngites of children, and of connecting it with clinical symptoms. The scattered threads which I should now like to pick up are these. All authors—even McKenzie—admit the existence of chronic subchordal swellings, and mention cases of such short duration that these must have been edematous rather than hypertrophic. Rauchfuss has shown that these swellings may occur in the ordinary catarrhal laryngitis of children, and has reported one or two cases in which they have existed, causing more and more dyspnea, and finally, after one, two or three weeks, death. Dehio has described the laryngoscopic appearance of these subchordal swellings, nearly as McKenzie did the enlargements in the chronic form, except that in the more acute form the color of the projecting membrane, pushed out by the edematous submucous tissue, was bright red.

What now did we have in our little patients? First, a tubercular constitution—a predisposing cause for subchordal enlargements; second, at the commencement of the attack in each case, a slight acute laryngitis, subsiding after a few nights of “croupiness”—an exciting cause for the beginning of a subinuous, subacute inflammatory infiltration which chose the loose submucous tissue below the vocal cords as its most favorable point, and as it gradually pushed out the membrane into the cavity of the larynx, produced snoring respiration, dyspnea, aphonia, difficult deglutition, and, in the case of the baby, death. What could it have been that the laryngoscope showed us in the second case except such a projecting swelling as Dehio describes? That this did not show at the autopsy is explained by the occurrence of the false membrane which often has the effect of making the submucous edema disappear. At the time of our examination we could see no false membrane. This projecting portion of the laryngeal membrane—after death covered with false membrane—was then certainly bright red. I believe both cases were laryngitis subchordalis acuta, as described by Rauchfuss and Dehio, and that in the second one, the diphtheria set in at about the time of the operation, either the day before, as evidenced by the rapid increase of dyspnea, or the day after, as evidenced by the rise of temperature, followed by the membrane forming on the blister and in the trachea. I do not believe that any of the membrane found at the autopsy was more than thirty-six hours old. Where the diphtheria came from I know not; but am sure it was not from any of the instruments used. The only other explanation which could be made of the cases would be that they were both diphtheritic in nature. I am aware that cases of diphtheria may last as long as these did, that sometimes the development of the disease, and especially the formation of membrane, is very slow, and that there is such a thing as chronic diphtheria; indeed, I have myself had an interesting case of the latter, lasting three months. But that these cases, or at least the one seen by me, were not diphtheritic, the following points seem to me to prove. First, I have never known *laryngeal* diphtheria to exist for this length of time. Second, the history of the case and the non-febrile, perfectly bright and cheerful condition of the patient, and third, the laryngoscopic examination.



## ABSTRACT.

1. Dehio: The Clinical Significance of the Acute Subchordal Swelling and the Origin of the Croupy Cough in Laryngitis (*Jahrbch. f. Kindbldde.*, XX. B., 3 H.).—Any point which will serve to make clearer the vexed consideration and classification of the various diseases characterized by hoarseness, dyspnea, and barking cough in children is worthy of consideration. Dr. Karl Dehio, the assistant of Dr. C. Rauchfuss, in an article made interesting in great part by the cases detailed, believes that he has demonstrated an etiological factor which has not yet received much attention. Dr. C. Rauchfuss (Gerhardt, 1878) was the first to draw attention to the swelling of the membrane below the vocal cords as the cause of the stenosis in the laryngitis in children. Türck had made mention of such swelling in 1866, but no attention had been paid to it. Burow reported a case in 1877, and in Ziemssen's work this case, with two from Rauchfuss and two from personal observation, was described under the head of "Laryngitis Hypoglossica Acuta Gravis." Dehio prefers the name LARYNGITIS SUBCHORDALIS ACUTA and ACUTE SUBCHORDAL SWELLING as describing better the condition and agreeing in analogy with the well-known laryngitis subchordalis *chronica*. Störck, in 1880, attributed the barking cough and dyspnea of false croup to the subchordal (I shall use this word) swelling, and in 1882 von Roth reported a case of acute larynx stenosis, which the laryngoscope showed to be entirely due to "acute swelling of the regio subchordalis."

According to Rauchfuss, there is rapidly developed puffy projection of the lower and inward surface of the vocal cords, depending on inflammatory infiltration of the submucous tissue, and causing more or less narrowing of the laryngeal opening. According to the degree of stenosis, the symptoms may vary from the slightly stridulous breathing of a light false croup to absolute suffocation. The swelling may occur alone or, more frequently, in connection with more or less diffuse laryngitis. Frequently, the inflammation begins at this point, and extends either upward or downward. Rauchfuss therefore considered it as one of the symptoms or component parts of acute general laryngitis, and the fact that it sometimes occurs without inflammation of the other parts of the larynx does not make it of necessity a separate disease, as according to Ziemssen, nor is it necessary, as the author proceeds to show, to attach the adjective "gravis" to it.

We come now to Dehio's particular task, which has been to connect clinical symptoms with laryngoscopic appearances. From the large material of Rauchfuss' clinic, he has made a series of laryngoscopic examinations in all cases of acute laryngitis where it was possible. These cases we, unfortunately, cannot follow, but we may pick out the particulars from a few. He found well-marked subchordal swelling in cases of (a) simple *barking* cough. Here there was no hoarseness and no anatomical change in the larynx except the puffy subchordal swelling. The boy was large, and the swelling was not enough to produce stenosis. (b) Barking cough, dyspnea, but no loss of voice, all much

less marked in four hours and about well in twenty-four hours, showing how rapidly the swelling may disappear. Here also the vocal cords were not affected. (c) The same symptoms coming on vary rapidly in a younger child, accompanied with great dyspnea and all the symptoms of false croup, the child in struggling for breath giving a very clear view of exactly the same subchordal swelling, but here in the narrow larynx causing more nearly complete obstruction, the whole set of symptoms and the swelling subsiding in a few hours, and disappearing in a few days. (d) Slight general laryngitis with barking cough, and not much change of voice. (e) Acute catarrhal laryngitis with barking cough, but no change of voice or alteration in appearance of edges of cords. (f) Acute laryngitis complicating morbilli, and accompanied by barking cough and larynx stenosis. (g) Laryngitis subchordalis with protracted course, and resulting in subacute laryngitis.

It may be seen from these few selections from the author's many cases that his subchordal swelling plays an important rôle in many of the laryngeal affections of children. The case mentioned last was especially interesting, because it showed so clearly the transition from an isolated subchordal swelling to a general inflammation, and because the author was able to study in it the exact mechanism of the barking cough.

When we consider the space below the vocal cords, we immediately see that a simple catarrhal swelling of the mucous membrane could never form such projections beyond the borders of the cords, standing out below them, when the cords open, like red masses. It is rather the puffing out of the inflammatory, edematous infiltration of the submucous tissue, which in exactly this region is looser and richer in interstitial spaces than in any other part of the larynx. Dehio has made experiments on the cadaver by injecting carmine solutions into this submucous tissue, and found that he could produce accurately such subchordal swellings, limited above by the free border of the cords where the submucous tissue becomes scarce, and the membrane more firmly adherent.

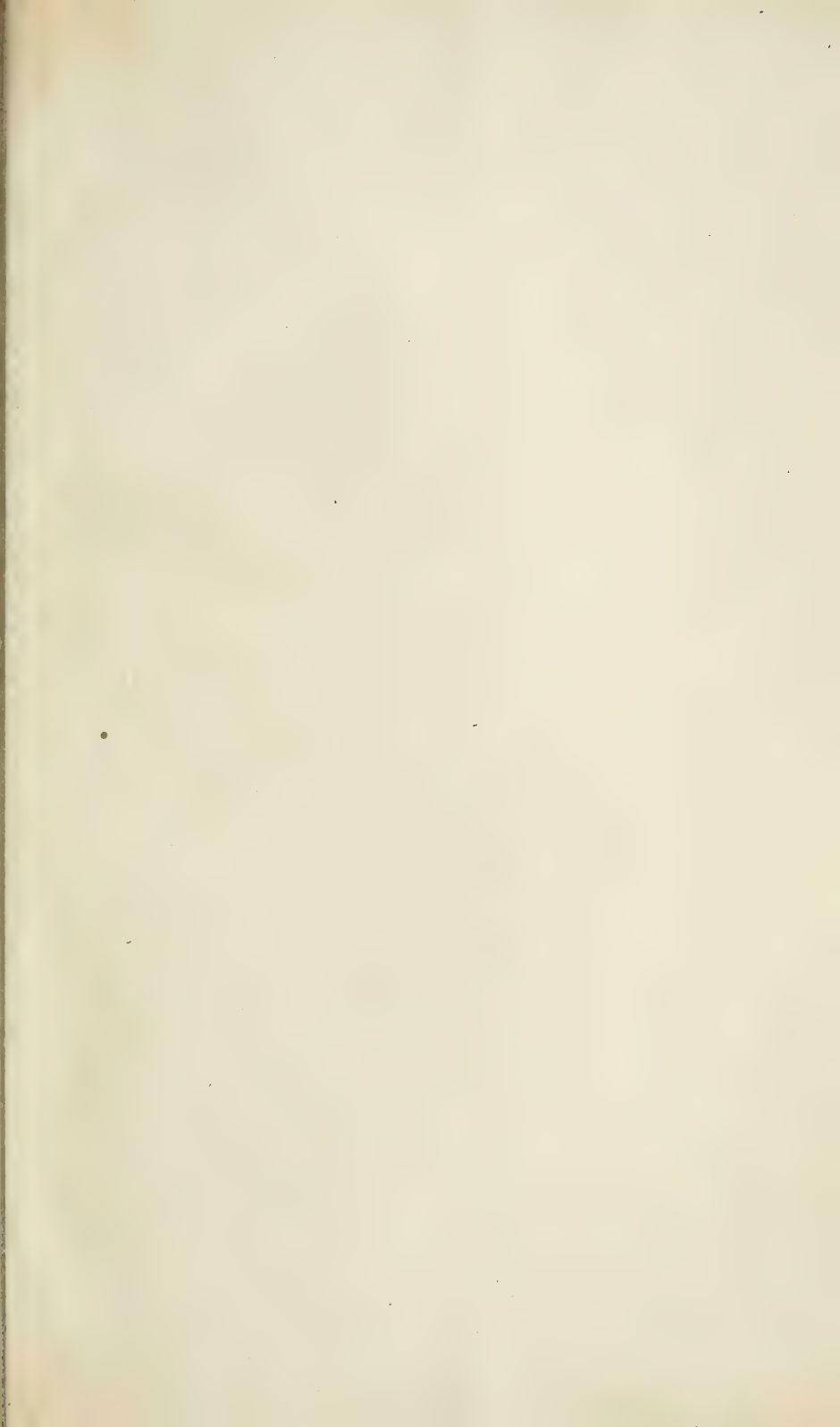
As has been seen from the cases cited, the most constant clinical symptom found, when the laryngoscope revealed this swelling, was the *barking cough*, accompanied, or not, by hoarseness and dyspnea, according to the further affection of the larynx. When the swelling existed alone and was not great enough to close the larynx, the only constant symptom was the barking cough. When the larynx was closed, this was accompanied by the symptoms of stenosis. These two may be regarded as the clinical manifestations of laryngitis subchordalis acuta. When they occur suddenly and disappear rapidly, we have the clinical picture of false croup [in the German acceptance of the term.—J. F.]. The author expresses the decided opinion that the "pseudocroup of children is in most cases an intense, rapidly subsiding laryngitis subchordalis acuta." He has never seen a case where it led to death—that is, when the process was of purely catarrhal nature. A very different picture is offered when the larynx stenosis continues for days, yes weeks, as in cases described by Rauchfuss. [These were not cases of *chronic* subglottic laryngitis, but acute, and accompanied with further inflammation of the larynx.—J. F.] When there is diffuse laryngitis accompanying the subchordal swelling, especially when the cords are inflamed and swollen, we have the changes in the voice added to the other symptoms, the barking

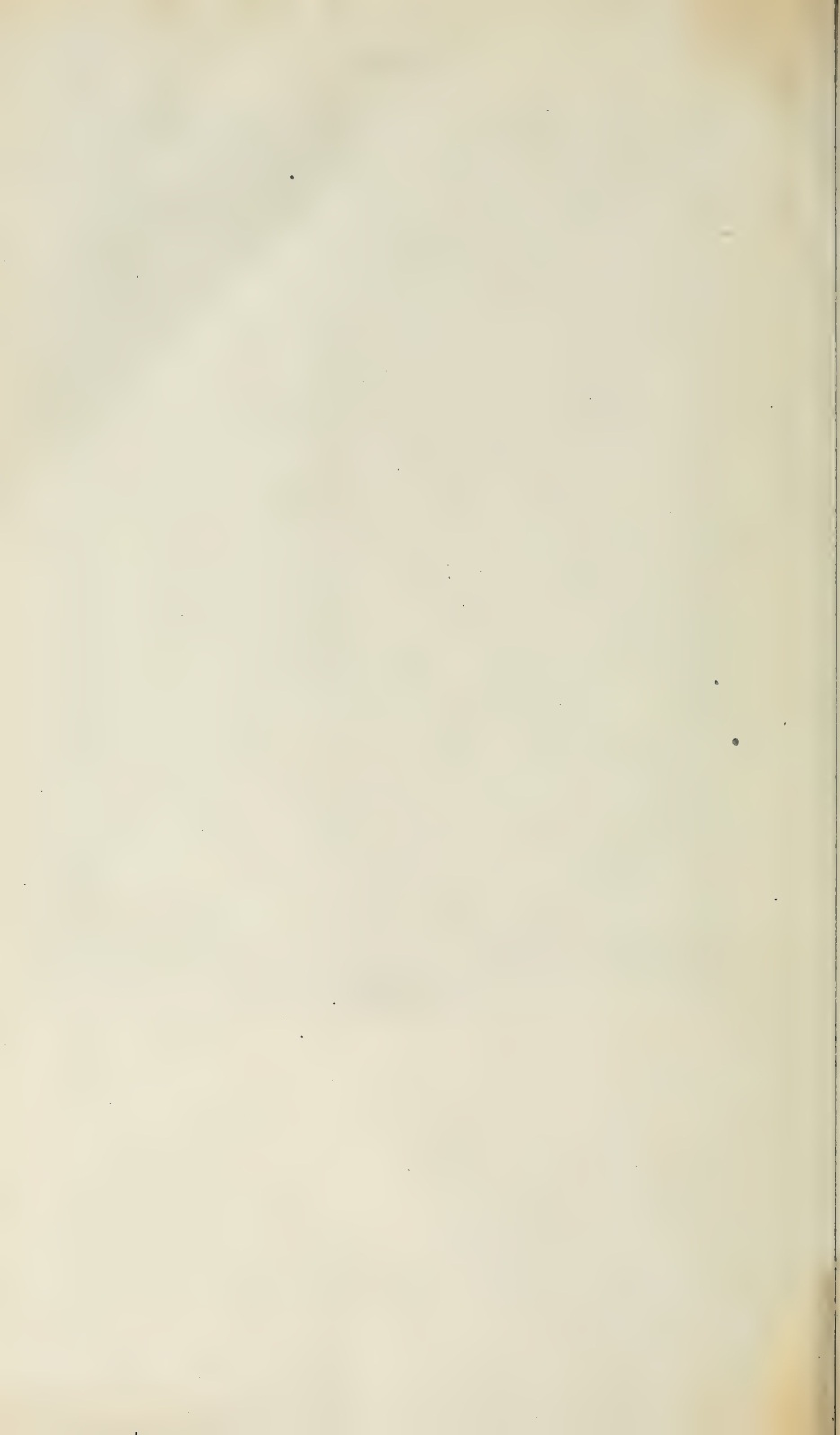
cough still being present. This cough has been present in every case where the swelling was found, and in one case the mirror showed clearly how, at the instant of coughing, the cords were widely separated and these subchordal swellings *themselves thrown into vibration*, producing the barking tone. In another case, there was first inflammation of the cords, with hoarseness, but no barking tone to the cough. Then the subchordal tissue swelled, and the cough became barking. The swelling subsided, the barking stopped, and there remained only the hoarseness. The author believes the real barking cough to be pathognomonic of subchordal swelling. We may get a rough, bellowing, whizzing cough from other causes, but not the hollow, barking cough. The hoarseness, also attributed by Störck to the subchordal swelling, he thinks is not due to this, but only present when there are other causes affecting the cords.

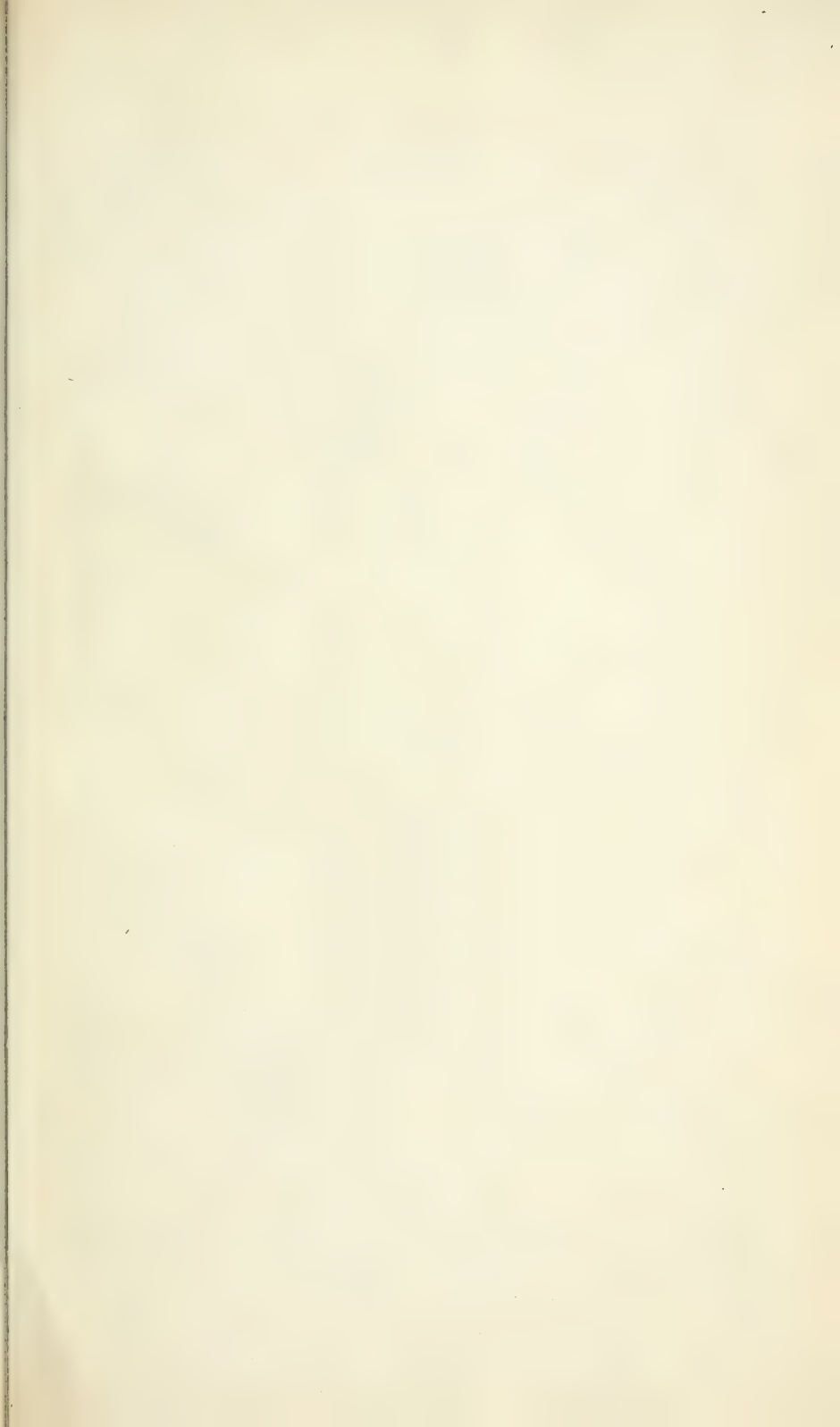
He therefore believes that the seat of acutely arising larynx stenosis is in the subchordal region; that, though other parts of the larynx may also become greatly swollen, stenosis does not then often occur when the process is catarrhal (non-membranous); that the accumulation of mucus on the cords is not enough to cause stenosis; that spasm of the glottis is a great rarity, if it ever exists; that a swelling which in a large child produces only the barking cough may in a small child produce severe stenosis. Other symptoms, such as tickling and burning in the throat, temperature, tendency to cough, etc., are of little value in diagnosis. As might be inferred from these views, the treatment was generally such as would rapidly reduce the swelling: hot inhalations, hot applications to neck, etc. In closing, the author gives an interesting picture of the occurrence of the subchordal swelling in cases of diphtheritic or "genuine" croup (membranous—the German classification). The well-known clinical course, the cough at first hoarse, then gradually becoming barking, and symptoms of stenosis setting in, he has often followed with his laryngoscope, and seen at first only a congestion of the larynx, then the parts of the membrane where there is going to be deposit become more injected and swollen—then may be seen the subchordal swellings, and the cough becomes barking. On the next morning, on these swellings and on other spots may be seen the whitish-gray deposits, and the stenosis increases, and so on; but the spot of greatest narrowing of the larynx he has always found to be between these subchordal swellings, and in cases of recovery these swellings are last to disappear, and the cough stays with them. [It may be interesting, in connection with this abstract, to notice the cases of diphtheria (?) reported by me in this number of the magazine.—J. F.]

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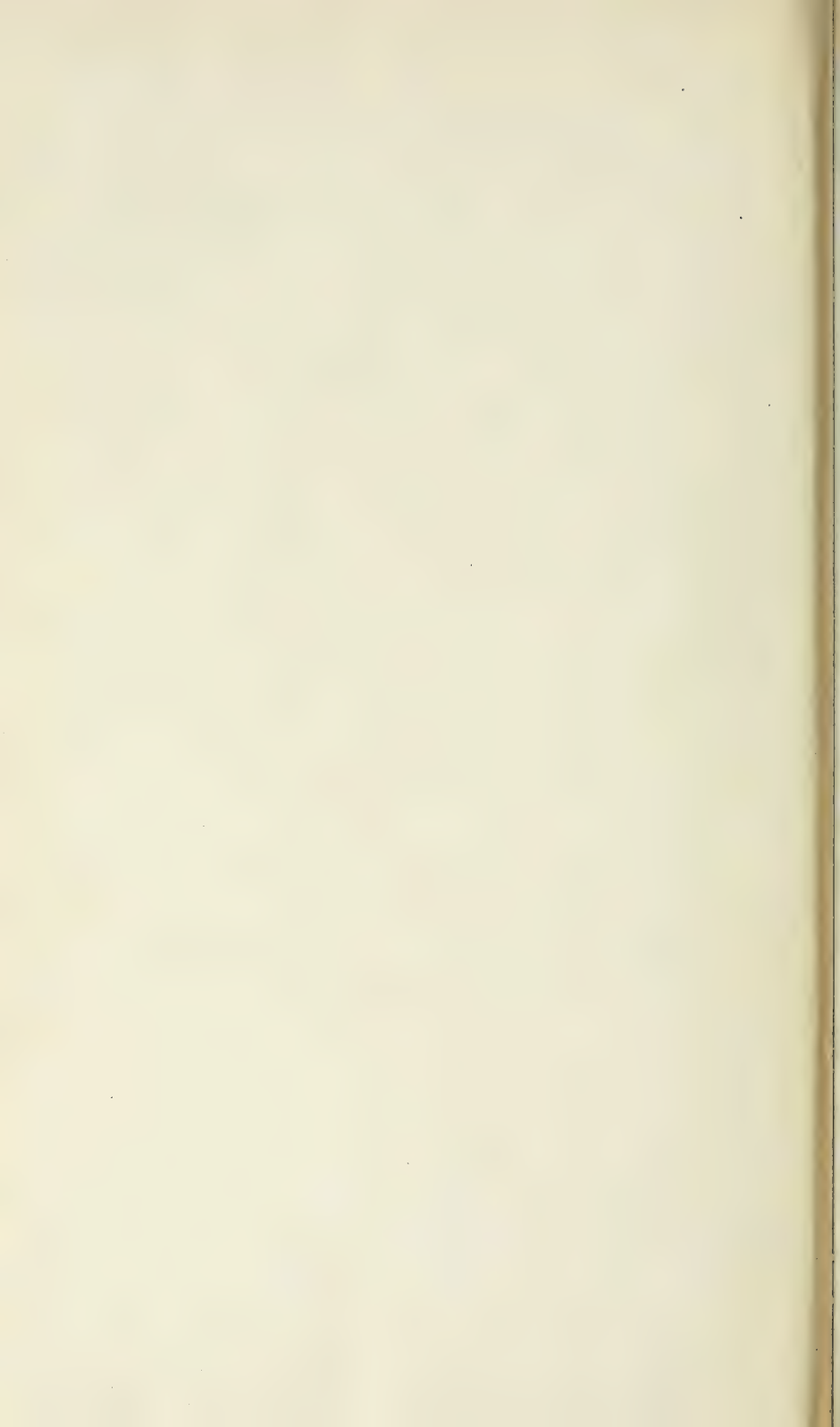


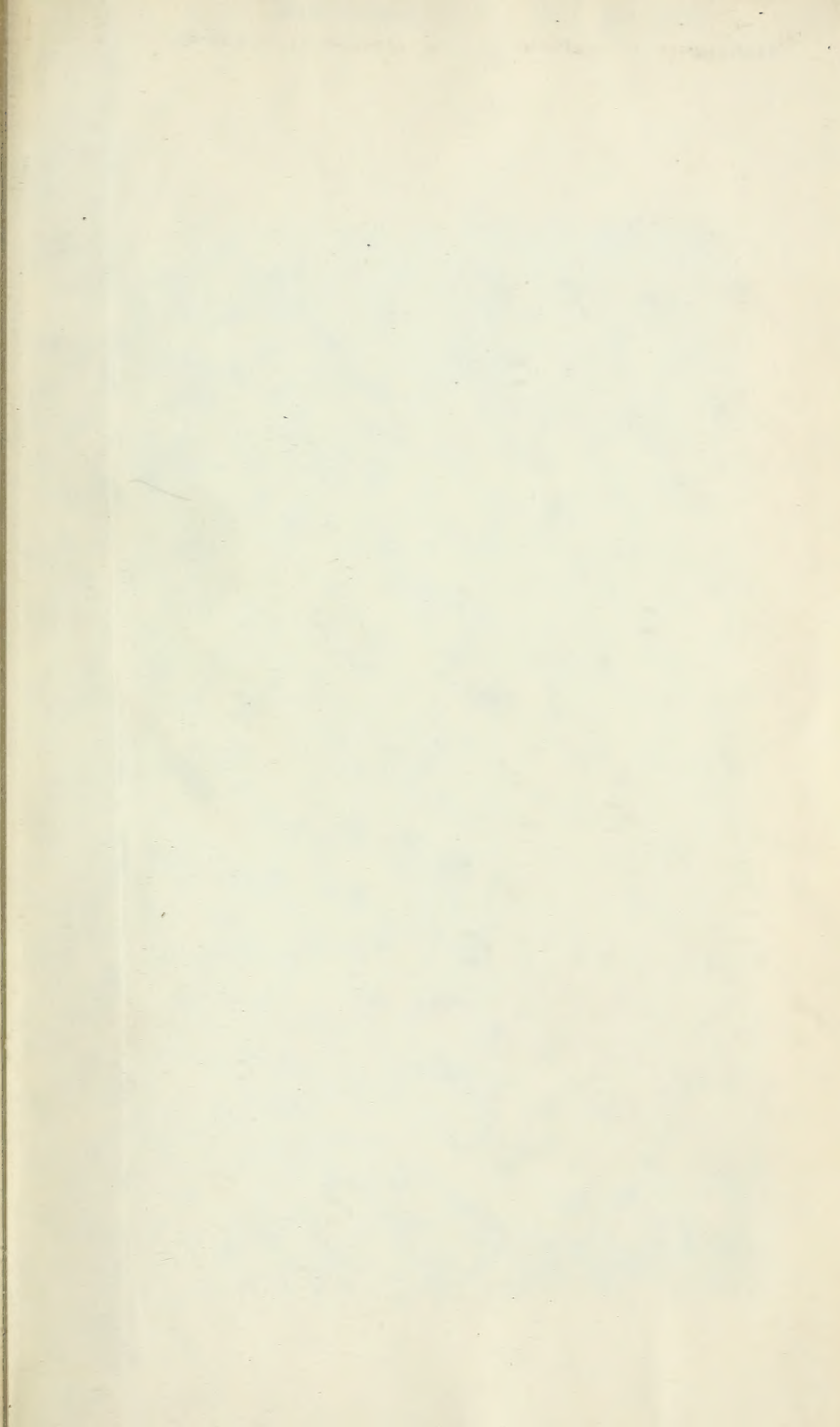
















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